

The Contribution of Cook's Third Voyage to the Ornithology of the Hawaiian Islands¹

DAVID G. MEDWAY²

THE FIRST EUROPEAN knowledge of the birds of the Hawaiian Islands was obtained as a result of the relatively brief visits of 1778 and 1779 made in the course of James Cook's third voyage of circumnavigation. The first valid scientific descriptions of eleven Hawaiian bird species or subspecies were based on specimens collected during those visits. They are the 'iwi *Vestiaria coccinea* (Forster, 1781); the mamo *Drepanis pacifica* (Gmelin, 1788); the Hawaii 'akialoa *Hemignathus obscurus obscurus* (Gmelin, 1788); the 'apapane *Himatione sanguinea sanguinea* (Gmelin, 1788); the Hawaii 'amakihi *Loxops virens virens* (Gmelin, 1788); the Hawaii 'akepa *Loxops coccinea coccinea* (Gmelin, 1789); the 'o'u *Psittirostra psittacea* (Gmelin, 1789); the Hawaii 'o'o *Moho nobilis* (Merrem, 1786); the Hawaii Thrush *Phaeornis obscura obscura* (Gmelin, 1789); the 'elepaio *Chasiempis sandwichensis sandwichensis* (Gmelin, 1789); and the Hawaiian Rail *Porzana sandwichensis* (Gmelin, 1789). Altogether, seven specimens of Hawaiian birds collected on the third Cook voyage, along with two probably collected then, still survive in the British Museum (Natural History), London; the Merseyside County Museums, Liverpool; the Naturhistorisches Museum, Vienna; the Rijksmuseum van Natuurlijke Historie, Leiden; and the Institut für Völkerkunde der Universität, Göttingen. These specimens, of which six, possibly seven, have type status, are of *Vestiaria coccinea* (2 specimens); *Drepanis pacifica* (1); *Hemignathus obscurus obscurus* (1); *Psittirostra psittacea* (3); *Phaeornis obscura obscura* (1); and *Porzana sandwichensis* (1).

With the exception of *Vestiaria coccinea*, specimens of which were first obtained on

Kauai in 1778, all third-voyage Hawaiian bird specimens taken back to England were almost certainly obtained on Hawaii in 1779 while the ships lay in Kealahou Bay. Some of the latter were obtained from the Hawaiians and others by collection on various inland excursions. The Kona district of Hawaii is the type locality for all validly described third-voyage Hawaiian birds with the exception of *Vestiaria coccinea*, for which the type locality is the Waimea district of Kauai.

There can be no doubt that the third-voyage visits of 1778 and 1779 are fundamental to the history of Hawaiian ornithology. However, although two hundred years have passed, no adequate account has yet been written which deals specifically with the ornithological observations made during those visits, with the bird specimens obtained then, and with the descriptions later based on those specimens. It is hoped that this paper will go some way toward telling the full story and will enable the significant contribution Cook's third voyage made to the ornithology of the Hawaiian Islands to be fully known and appreciated.

OBSERVATIONS DURING THE VISITS OF 1778 AND 1779

The Hawaiian Islands were first sighted from the *Resolution* and *Discovery* during the morning of 18 January 1778. The ships came to anchor in Waimea Bay, Kauai, two days later. They remained there only until 23 January, when they raised anchor and sailed for Niihau.

Anderson's Account

Few opportunities to acquire any knowledge of the natural history of Kauai presented

¹ Manuscript accepted 20 April 1980.

² P.O. Box 476, New Plymouth, New Zealand.

themselves on this first brief visit. The principal employment during this visit was watering and the obtaining of provisions by trade. During the stay, only one short inland excursion took place. On the morning of 21 January, Cook, William Anderson (surgeon on the *Resolution*), and John Webber (artist on the *Resolution*) walked about a mile up the valley of Waimea Stream (Beaglehole 1967:269-272, 1083). It was probably on this occasion that the single small bird, which will be referred to again shortly, was seen and recorded by Anderson. On their return they found a great crowd assembled at the beach and a brisk trade being carried on there for pigs, roots, and fowls. The fowl was the Jungle Fowl *Gallus gallus* (Linnaeus, 1758), which is still a common species in the mountains of Kauai. It seems that it was Anderson who, on this occasion, noted the feathered cloaks and caps of the Hawaiians and wondered where they got such a quantity of the beautiful feathers used in their manufacture (Cook and King 1784, vol. 2:206-207). Despite his serious illness, Anderson contributed almost all of the natural history information which is available from this first Kauai visit. Fortunately Douglas, the editor of the official account of the voyage, made great use of Anderson and incorporated into that account many of Anderson's observations from the now missing third volume of his Journal (Beaglehole 1967:xcx, cci-ccii; Wallis 1978: 177). One observation almost certainly from Anderson includes a description of the first Hawaiian bird species known to have been procured by Europeans (Cook and King 1784, vol. 2:207-208):

We were at a loss to guess from whence they could get such a quantity of these beautiful feathers; but were soon informed, as to one sort; for they afterward brought great numbers of skins of small red birds for sale, which were often tied up in bunches of twenty or more, or had a small wooden skewer run through their nostrils. At the first, those that were bought, consisted only of the skin from behind the wings forward; but we, afterward, got many with the hind part, including the tail and feet. The first, however, struck us, at once, with the origin of the fable formerly adopted, of the birds of paradise wanting legs; and sufficiently explained that circumstance. Probably the people of the islands East of the Moluccas, from whence the skins of the birds of paradise are

brought, cut off their feet, for the very reason assigned by the people of Atooi, for the like practice; which was, that they hereby can preserve them with greater ease, without losing any part which they reckon valuable. The red-bird of our island, was judged by Mr. Anderson to be a species of *merops*, about the size of a sparrow; of a beautiful scarlet colour, with a black tail and wings; and an arched bill, twice the length of the head, which, with the feet, was also of a reddish colour. The contents of the heads were taken out, as in the birds of paradise; but it did not appear, that they used any other method to preserve them, than by simple drying; for the skins, though moist, had neither a taste nor smell that could give room to suspect the use of antiputrescent substances.

The bird described is clearly *Vestiaria coccinea*. Anderson undoubtedly obtained a specimen or specimens on this occasion, for he was able to include a detailed description of the species in his important manuscript "*Zoologia nova . . .*" (Anderson n.d.), in which he carefully described various new species (particularly birds) met with as the third voyage proceeded (Medway 1979). Unfortunately for us, *Vestiaria coccinea* is the only Hawaiian bird species which Anderson was able to describe. He died in August 1778 and thus did not have the opportunity to examine the several new bird species met with during the stay at Kealahou Bay in 1779. His "*Zoologia nova . . .*" description of *Vestiaria coccinea*, which he called *Merops scarlatinus*, is as follows (Anderson n.d., no. 24):

Magnitudo circiter Passeris Rostrum arcuatum subcompressum fere duplo longitudine capitis. Nares ovatae in basi Rostris membrana semitectae. Lingua penicillata. Corpus totum ex scarlatino vividissimo. Alae caudaeque nigrae remigibus interdum margine albidis rectricibus aequalinum. Pedes subgressorii. Rostrum Pedesque rubicunda.
Habitat Insulam A,tou'I, Latit^d. N. Long^d Gregarius?

Cook recorded (Beaglehole 1967:278) that at Kauai "the tame Animals are hogs, dogs and fowls, all of the same kind as at Otaheite and equally as good. We saw no other wild animals than rats, small lizards and birds; but as we did not penetrate into the country, we neither know in what plenty nor variety they may have of the latter."

We have only two accounts which give some indication of the identity of the few

birds met with at Kauai during the 1778 visit. The first is by Anderson, as incorporated into the official account of the voyage (Cook and King 1784, vol. 2:227–228):

The scarlet birds,³ already described, which were brought for sale, were never met with alive; but we saw a single small one, about the size of a canary-bird, of a deep crimson colour;⁴ a large owl;⁵ two large brown hawks, or kites;⁶ and a wild duck.⁷ The natives mentioned the names of several other birds; amongst which we knew the *otoo*, or blueish heron;⁸ and the *torata*, a sort of whimbrel,⁹ which are known by the same names at Otaheite; and it is probable, that there are a great many sorts, judging by the quantity of fine yellow, green, and very small, velvet-like, black feathers used upon the cloaks, and other ornaments, worn by the inhabitants.

³ *Vestiaria coccinea*. Webber drew a specimen which had been collected on Kauai. His original drawing, signed and dated 1778, is in the Gordon Atlas in the Rijksmuseum, Amsterdam.

⁴ Undoubtedly an 'apapane *Himatione sanguinea sanguinea*, probably seen by Anderson during the walk on Kauai on 21 January 1778.

⁵ *Pueo asio flammeus sandwichensis* (Bloxam 1826). It was noted (Cook and King 1784, vol. 2:219) that at Niihau "a particular veneration seemed to be paid . . . to owls, which they have very tame." The pueo was also recorded on Kauai by King.

⁶ Since two individuals are mentioned, perhaps this was indeed the 'io or Hawaiian Hawk *Buteo solitarius* (Peale, 1848) rather than a vagrant species from the mainland of North America. But, as far as is known, the Hawaiian Hawk is endemic to the island of Hawaii, where it is now rare. The type specimen was obtained near Kealahou Bay and the species was later recorded many times from the district of Kona. However, there are no references to "Hawks" in the various accounts of the stay at Kealahou Bay, no specimens are known to have been collected then, and it is impossible now to determine the specific identity of the birds seen on Kauai.

⁷ It is impossible to identify this duck. It may have been the koloa or Hawaiian Duck *Anas platyrhynchos wyvilliana* Slater, 1878, natural populations of which are now apparently confined to Kauai; or it may have been one of the wintering migratory species. No specimens of the koloa are known to have been collected on Cook's visits.

⁸ *Otu'u* is the Tahitian name for the Reef Heron *Egretta sacra* (Gmelin, 1789), a species which has never been definitely reported from the Hawaiian Islands. It is more likely that Anderson's informant was in fact referring to the 'auku or Black-crowned Night Heron *Nycticorax nycticorax hoactli* (Gmelin, 1789).

⁹ I do not know the *torata*. The most likely "sort of whimbrel" on Kauai would be the kioea or Bristle-thighed Curlew *Numenius tahitiensis* (Gmelin, 1789).

This Anderson description was reproduced by Stejneger (1887:75), who did not attempt to determine the species referred to. Wilson (1977:14) also reproduced it. She thought it likely that the "red-bird . . . judged by Mr. Anderson to be a species of *merops*" was an 'i'iwi. There can be no doubt that such species was in fact *Vestiaria coccinea*.

James King included a brief description of Kauai's birds in his *Log and Proceedings* (King 1776–1778, folio 127). His account bears such close resemblance to that of Anderson that the two may have collaborated when writing them. King's description, which has not previously been published, is as follows:

We purchas'd many birds of a Beautiful crimson colour, about the size of a Goldfinch, with a long curv'd bill, but we saw none alive; we only saw large Owls, 2 large brown hawks or kites & wild ducks. But the Natives mention other birds, from which they get their red & Yellow feathers, that are to be found in the mountains.

The ships were again anchored at Waimea Bay, Kauai, between 1 March and 8 March 1779, on the second visit to the islands. The principal business on that occasion was the obtaining of water, but considerable trade also took place offshore. It is clear that on this visit the Hawaiians onshore were regarded as being potentially troublesome and shore parties were closely guarded. Beaglehole (1967:578, fn.) quotes Burney as saying, "Whilst we lay here, none of us ventured to walk about or Straggle on shore amongst the Indians as formerly." There is no evidence that any further bird specimens were obtained during this second Kauai visit. *Vestiaria coccinea* is therefore the only bird species of which we know specimens were obtained at Kauai. Those specimens were undoubtedly all obtained at Waimea in January 1778.

In January 1778 the ships sailed from Kauai to Niihau, where they anchored from 29 January to 1 February. Trading took place but there is no evidence that any bird specimens were obtained on this island, either on this visit or during the later visit of 9–16 March 1779.

On 2 February 1778, the ships stood to the

northward and did not return to the Hawaiian Islands until late November of that year. Trading took place offshore as the ships sailed along the coast of Hawaii. On 23 December 1778, Cook recorded (Beaglehole 1967:484) that "several of the islanders came off with Hogs, fowls, fruit and roots to exchange. We got out of one Canoe a goose, which was about the Size of a Muscovy duck, its plumage was dark grey and the bill and legs black." This is the first known reference by Europeans to the nene or Hawaiian Goose *Branta sandvicensis* (Vigors, 1833). On 18 January 1779, the day after the ships had anchored in Kealahou Bay, Thomas Edgar (master of the *Discovery*) mentioned in his *Log* (Edgar 1778-1779) that "this afternoon the Captn bought 2 small Brown Geese, which was quite tame." William Ellis later noted (1782, vol. 2:143) that "upon our first arrival at Karacacooah Bay, the natives brought off several geese, which were quite tame; they were not unlike the Chinese geese; they called them Na-na. By what means they procured them, we could not learn." King recorded (Beaglehole 1967:627, 630) that the Hawaiians at Kealahou Bay "had Geese tame, but we suppos'd them taken when young, as we did not ever see them at their houses" and he noticed that "the skin of birds particularly one of a Goose was conspicuous" on a pole with a cross staff set up for boxing and wrestling matches which he witnessed. These skins are visible in Webber's painting of one such event (see, e.g., Murray-Oliver 1975:181, and Barrow 1978:128-129). Samuel (Beaglehole 1967:1188) also noted "a few Geese" on Hawaii. However, no specimens of the Hawaiian Goose are known to have been taken back to England on the third-voyage ships, and Latham, when describing his "Chinese Goose" (1785:447-449, no. 12), relied on Ellis's above-quoted account when he said that "our last voyagers met also with this, or one very like it, at Owhyhee."

Clerke's Account

The third-voyage ships anchored in Kealahou Bay on 17 January 1779, and remained there until 4 February. However, they re-

turned again on 11 February in order to make repairs on the *Resolution*. On 14 February Cook was killed and the ships finally departed Kealahou Bay on 23 February. It was during the first Kealahou stay that almost all of the third-voyage Hawaiian bird specimens were obtained, either from the Hawaiians or by collection on the various inland excursions which will be described shortly. The most detailed account of the birds met with there was written by Charles Clerke. It is clearly his original account (in Adm 51/4561/217) which King included in the official account of the voyage (Cook and King 1784, vol. 3:119). (For this reason King has received most of the credit for the account.) The only alteration King made was to add the names apparently given by the Hawaiians to three of the species Clerke mentioned. Rothschild (1893-1900:v) was not particularly generous when he described the published account as "a few short notes of little importance." He considered that *Drepanis pacifica*, *Vestiaria coccinea*, *Corvus tropicus*, *Himatione sanguinea*, *Psittirostra psittacea*, and *Moho nobilis* can be recognized with absolute certainty. Rothschild's statement seems to have been the basis for the comment by Bryan and Greenway (1944:80) that six species can be recognized. Clerke's original account has subsequently been reproduced by Northwood (1942:10-11), Beaglehole (1967:602-603), and Wilson (1977:15) but, in my opinion, they have not correctly identified some of the species. Northwood considered that most of the birds mentioned can be readily identified from the descriptions, which he said show considerable knowledge of birds and the ability to depict them clearly and concisely. Clerke's 1779 account is as follows, with the 1784 published additions in brackets:

The birds of these Islands are as beautiful as any we have seen during the Voyage, and are numerous though not various. There are four which seem to belong to the Trochili or Honey-Suckers of Linnaeus, one of which is something larger than a Bullfinch; its colour is a fine glossy black, the rump, vent, and thighs deep yellow [it is called by the natives *hoo-hoo*];¹⁰ another is of an

¹⁰ Beaglehole thought there was a little doubt about which particular bird this description applies to, but

exceeding bright Scarlet colour, the wings and tail black [its native name is *eevee*]:¹¹ a third which seems to be either a young bird or variety of the Foregoing is variegated with red, brown and yellow;¹² the fourth is entirely green with a tinge of yellow [and is called *akaiearooa*].¹³ There is a species of Thrush with a grey breast,¹⁴ and a small bird of the Fly-catcher kind;¹⁵ a Rail with very short wings and no tail, which on that account we named, *Rallus ecaudatus*.¹⁶ Ravens are found here but they are scarce, their colour is dark brown inclining to black, and their Note is different from those of Europe.¹⁷ Here are two small birds both of one Genus, that are very common; one is red and is generally seen about the Coconut Trees, particularly when they are in flower, from whence it seems to derive great part of its subsistence, the other is green; the tongues of both are long and ciliated or fringed at the Tip.¹⁸

A Bird with a yellow head, which from the structure of its beak, we called a Parroquet, is likewise very common;¹⁹ it however by no means belongs to that tribe, but greatly resembles the *Loxia flavicans* or yellowish Cross-bill of Linnaeus.

Here are also Owls,²⁰ Plovers of two sorts, one very like the whistling Plover of Europe,²¹ a large whitish Pigeon,²² a bird with a long tail whose colour is black,

322) identified the drawing as of the American Hawk Owl *Surnia ulula caparoch* (P. L. S. Muller, 1776) (see also Medway 1979:318).

²¹The plover "very like the whistling Plover of Europe" is clearly the Pacific Golden Plover *Pluvialis dominica fulva* (Gmelin, 1789). Webber drew a specimen from the Sandwich Isles (folio 115; see Lysaght 1959: 340). Pennant wrote (1785:484) that his "Golden Plover" extended "as far south as the *Sandwich* isles: in the last it is very small." This suggests he saw a specimen, no doubt the third-voyage specimen from "Owhai-hee," which we know from Solander catalogue entry no. 94 (Medway 1979:330) was in the Banks collection. Latham (1785:194) relied on Ellis (1782, vol. 2:95) for his information that "our last voyagers met with them at *Owhyhee*."

Beaglehole thought that one of Clerke's plovers was probably the Wandering Tattler *Tringa incana* (Gmelin, 1789). Northwood considered that one of them was perhaps the Black-bellied Plover *Squatarola squatarola* (Linnaeus, 1766) although another migrant might be indicated, such as the Wandering Tattler or Turnstone *Arenaria interpres* (Linnaeus, 1766). However, we know from Solander catalogue entry no. 104 (Medway 1979: 331) that Banks received one third-voyage specimen of a *Charadrius* from Owhy-hee. This specimen is briefly described in Dryander's (n.d.) ms list 2 (see Medway 1979 and later in this paper) as follows:

119. *pusillus* Ch. cinereus subtus albus, fronte albo lineatransocula nigra, remigibus majoribus externe nigris
1
Sol. cat. 104. Owyhee

It was no doubt this specimen to which Latham (1785: 203) referred when describing Variety A of his "Ringed Plover" and it may also have been seen by Pennant (1785: 485) who said that his "Ringed Plover" was "found by the navigators as low as *Owyhe*, one of the *Sandwich* isles, and as light-colored as those of the highest latitudes." The Banks bird seems to have been a specimen of the Semipalmated Plover *Charadrius semipalmatus* Bonaparte, 1825. If so, this is the first record of that species from the Hawaiian Islands. It may have been the other sort of Plover to which Clerke refers.

²²No pigeons are known to have been endemic to Hawaii. Clerke clearly was a most careful observer and recorder and would know a pigeon when he saw one but this "large whitish Pigeon" is impossible to identify. Wilson and Evans (1890-1899:145) thought that his statement may possibly refer to the White Tern *Gygis alba* (Sparrman, 1786) since what he saw, they said, certainly could not have been a pigeon. Beaglehole says that Clerke's bird was in all probability the White Tern since this species has often been mistaken for a pigeon in the woods or among coconut palms. Rothschild (1900: 285) noted that, with the exception of this rather doubtful "White Pigeon," there was no authentic record of the occurrence of the White Tern on the Hawaiian Islands proper. However, Dixon (1789:312) published an illustration based on a specimen of a "White Tern from *Sandwich Islands*," presumably collected in the Hawaiian Islands in 1786 or 1787, but we do not know exactly where in the islands it was obtained.

clearly *Drepanis pacifica* is the bird to which Clerke refers. It appears that King, in the official account of the voyage, incorrectly assigned to it the Hawaiian name for *Moho nobilis* which Clerke mentions later.

¹¹Adult *Vestiaria coccinea*.

¹²As Northwood has pointed out, Clerke is here describing immature *Vestiaria coccinea*.

¹³Beaglehole identified this bird as *Loxops virens* and Northwood thought it was probably the Greater Amakihi *Loxops sagittirostris* (Rothschild, 1892), but the former is referred to later in Clerke's account and there is no evidence that the latter was met with on this voyage. Clerke seems clearly to be referring here to *Hemignathus obscurus obscurus*.

¹⁴*Phaeornis obscura obscura*.

¹⁵*Chasiempis sandwichensis sandwichensis*.

¹⁶*Porzana sandwichensis*.

¹⁷Hawaiian Crow or 'alala *Corvus hawaiiensis* Peale, 1848.

¹⁸Beaglehole thought that these birds were probably male and female *Loxops coccinea*, but it is clear that the red one is *Himatione sanguinea sanguinea* and the green one *Loxops virens virens*.

¹⁹*Psittirostra psittacea*.

²⁰*Asio flammeus sandwichensis*. As we will see later, Ledyard recorded this species in the course of an excursion inland from Kealakekua Bay in January 1779. No specimens are known to have been taken back to England. The bird described by Latham (1781-1782: 152) as a variety of his "Canada Owl" from the Sandwich Islands was identified by Stresemann (1949:250) as Tengmalm's Owl *Aegolius funereus richardsoni* (Bonaparte, 1838), Latham having given an incorrect locality. Stresemann thought that Ellis folio 8 (Ellis 1776-1780) represents that species but Lysaght (1959:

the vent, and feathers under the wings (which are much longer than is usually seen in the generality of birds except the bird of Paradise) are yellow,²³ and the common water, or darker Hen.²⁴

King's Account

James King also included an account of Hawaii's birds in his *Log and Proceedings* (King 1778-1779, folio 153v). This account was first published by Beaglehole (1967:630-631) and later by Wilson (1977:17). Again it seems that some of the species referred to have previously been incorrectly identified. King's 1779 account is as follows:

I have already mentioned in a former account,²⁵ the Quadrupeds & fishes, to which we have no more to add: but we have seen a greater Variety of birds. To the Crimson colour'd one,²⁶ we had now brought to us a dark green bird of the same size & shape, its bill being black.²⁷ A black bird, with a bunch of Yellow feathers upon the breast & rump, these are the size of a black bird & have a long curv'd bill.²⁸ A small pale green bird, & another with dirty mixt feathers, both the size of a linnet, with a similar bill.²⁹ These birds they brought to us alive; We had also brought to us by the Natives a dull & dark green colour'd dove;³⁰ Ravens were also seen,³¹ & some of these were kept about their houses, & they had some superstitious notions about them, for

they call'd one an Eatooa. They had Geese³² tame, but we suppos'd them taken when young, as we did not ever see them at their houses.

Ellis's Account

Two years after the voyage Ellis published (1782, vol. 2:143) an account of the birds of the island of Hawaii. This has been reproduced by Wilson (1977:16), who did not attempt to identify the birds to which Ellis refers. The Ellis account is as follows:

The birds are very numerous, though not various, some of which can vie with those of any country in point of beauty. Five different species may be referred to the *certhia* genus of Linnaeus:³³ one, which, from the structure of its beak, was called, by our seamen, a parroquet,³⁴ is quite an anomalous bird, and probably will afford a new genus. Among the more common ones, are owls,³⁵ plover,³⁶ nearly the same as our whistling plover, curlews,³⁷ and ravens;³⁸ the former and latter rather scarce. Upon our first arrival at Karacacooah Bay, the natives brought off several geese,³⁹ which were quite tame; they were not unlike the Chinese geese; they called them Na-na. By what means they procured them, we could not learn. They have ducks, and upon the coast are found a species of tern, two or three species of petrels, and a few gannets.⁴⁰

²³ *Moho nobilis*. As we have seen, King in the official account incorrectly assigned the Hawaiian name of this bird to *Drepanis pacifica*.

²⁴ Northwood identified this bird as the Hawaiian Coot *Fulica americana alai* Peale, 1848, or perhaps the Hawaiian Gallinule *Gallinula chloropus sandvicensis* Streets, 1877, while Beaglehole considered it to be probably the latter. However, it is clear that Clerke refers here to *Gallinula chloropus sandvicensis*, a species which we know was met with on this voyage, for it was illustrated by Ellis (folio 69; see Lysaght 1959:334; reproduced in Murray-Oliver 1975:171, pl. 55), but no specimens are known to have been taken back to England.

²⁵ Adm 55/166 (folio 127), King's description of the birds met with at Kauai in January 1778.

²⁶ Beaglehole identified this bird as *Himatione sanguinea* but, as we have seen, the "Crimson colour'd one" earlier described by King was *Vestiaria coccinea* and it is therefore that species to which he refers here.

²⁷ Because Beaglehole thought the previous species was *Himatione sanguinea*, he identified this as *Loxops virens*. However, King probably refers to *Hemignathus obscurus obscurus*.

²⁸ Beaglehole identified this bird as *Moho nobilis* but the "long curv'd bill" more aptly describes *Drepanis pacifica*.

²⁹ Beaglehole considered that the first of these birds was probably the Hawaii Creeper *Loxops maculata mana* (Wilson, 1891) but there is no evidence that this species was met with on the third voyage. He thought the other species was probably *Chasiempis sandwichensis*. However, King's reference to both being "the size of a linnet, with a similar bill" probably identifies them as female and male specimens of the Hawaii 'akepa *Loxops coccinea coccinea*.

³⁰ No endemic doves are known from Hawaii and it is impossible to determine the identity of King's bird.

³¹ *Corvus hawaiiensis*.

³² *Branta sandvicensis*.

³³ These five species are *Drepanis pacifica* (illustrated by Ellis, folio 27), *Hemignathus obscurus obscurus* (folio 28), *Vestiaria coccinea* (folio 29), *Himatione sanguinea sanguinea* (folio 30), and *Loxops virens virens* (folio 31).

³⁴ *Psittirostra psittacea* (illustrated by Ellis, folio 79).

³⁵ *Asio flammeus sandwichensis*.

³⁶ Pacific Golden Plover *Pluvialis dominica fulva*.

³⁷ These are perhaps the Bristle-thighed Curlew *Numenius tahitiensis*.

³⁸ *Corvus hawaiiensis*.

³⁹ *Branta sandvicensis*.

⁴⁰ These ducks, tern, petrels, and gannets are not specifically identifiable.

Very few references to Hawaii's birds are to be found in the writings of other third-voyage participants. When describing Hawaii, David Samwell, then surgeon of the *Discovery*, wrote (Beaglehole 1967:1188): "There are great plenty of large Hogs & Fowls & a few Geese on it with a great Variety of small birds in the woods, altogether unknown to us." Many of these small birds were probably seen by Samwell during his inland excursion of 24 January 1779, which will be discussed later. Heinrich Zimmermann, an able seaman on the *Discovery*, recalled (1930:89) when describing the Hawaiians' feather capes: "The birds which provide the feathers for this work are to be seen in masses such as I have never seen in any other locality and are quite easily trapped." Zimmermann was probably referring particularly to *Vestiaria coccinea*. What he wrote almost suggests that he may have seen large numbers of these birds as a member of one of the inland parties on Hawaii. However, there is no evidence which confirms his participation in any of those excursions, and he may have assumed that *Vestiaria coccinea* was quite easily trapped from the large numbers of these birds which were available for purchase at Waimea in January 1778 and which he may have seen.

George Gilbert, at Kealahou Bay a midshipman on the *Resolution*, wrote a narrative of the voyage (Gilbert 1776–1780) very soon after the return of the ships to England. This narrative contains the following brief and inadequate reference to Hawaii's birds:

The few Birds they have, are small and only remarkable for their plumage, being chiefly of the paroquet kind as at most of the other Tropical Islands; Indeed: there is one sort that is very small and all its feathers are intirely red, which I don't recollect to have met with at any other place; Fowls, are very plentiful here and exactly the same, as in England. But we never saw any of their Eggs either at these or the Islands to the Southward; which is rather surprizing.

Gilbert may be referring to *Psittirostra psittacea* when he talks of birds of the "paroquet kind." Perhaps his "intirely red" bird is *Vestiaria coccinea*.

William Bayly, then astronomer on the *Discovery*, included a general account of the Sandwich Islands in his *Journal*, wherein appears the following passage (Adm 55/20, folio 180v):

Their animals are Hogs & Dogs—Their fowls—Geese, Duck, Cocks & Hens—These Islands have great quantities of little Birds, with red, green, & yellow Plumage—which serve to make Cloaks,—Caps & other ornaments with.

A few more references to the birds of Hawaii are to be found in the records of those who participated in the various inland excursions which took place while the ships lay in Kealahou Bay. Those excursions will be considered shortly.

After leaving Hawaii on 23 February 1779, the ships sailed northward. On 24 February they passed along the southern side of Kahoolawe, which Ellis later described (1782, vol. 2: 148–149) as being "nothing more than a bluff rock, which is steep on all sides, with a slight verdure on the top." He said that "its sole inhabitants are sea-fowl, such as petrels, albatrosses, boobies, and gannets." He may have seen these birds off Kahoolawe as the ships sailed past. Latham (1785:308, fn.) relied on this Ellis account when he said that his "Wandering Albatross" had been met with at the Sandwich Islands.

Trading for hogs and fruits took place off Maui on 25 and 26 February. Lanai was passed on the latter date but the Hawaiians who came offshore there had nothing to trade. On 27 February the ships were off the northern end of Oahu. The next day Clerke and King went ashore at Waimea Bay for a very short time. Some trading took place offshore but there is no evidence that any bird specimens were obtained there. From Oahu the ships made for Kauai, where they anchored the next day. They spent a week there and a week at Niihau, the expedition finally leaving the Hawaiian Islands on 16 March 1779.

Newton (1892:465) considered that the natural history specimens obtained by Cook's ships were procured only on the islands of Hawaii, Kauai, and Niihau. However, the foregoing review establishes that bird speci-

mens are known to have been procured only on Hawaii and Kauai. The evidence is that only *Vestiaria coccinea* was obtained at Kauai and that all other third-voyage Hawaiian bird specimens were obtained at Hawaii in 1779. Thus, with the exception of *Vestiaria coccinea*, first obtained from the Waimea district of Kauai, the Kona district of Hawaii can be accepted as the type locality for those Hawaiian bird species which were first validly described from specimens collected on the third Cook voyage.

INLAND EXCURSIONS ON HAWAII

We know that at least three inland excursions took place in January 1779 while the third-voyage ships lay in Kealahou Bay. Such excursions are of considerable historical and scientific importance for two principal reasons. First, they are the first recorded excursions by Europeans into the forests of any of the Hawaiian Islands. Second, many of the specimens of Hawaiian birds and plants taken back to England on the third-voyage ships were obtained in the course of those excursions. A number of recently described Hawaiian plant species were collected on at least one of them (St. John 1976b).

David Samwell and the First Excursion, 24 January 1779

We are indebted to David Samwell, then surgeon on the *Discovery*, for the only record known to me of the first excursion by Europeans into the forests of Hawaii. On this excursion, which took place on 24 January 1779, Samwell was accompanied by two other Europeans whose identity we do not know. Samwell's *Journal* account, which has been published by Beaglehole (1967: 1166–1167), is worth repeating here. I have added italics.

Three of us to day taking Canicoa with us as a Guide made a short Excursion up the Country towards the Snowy Mountain. As we ascended the Hills we came among their Plantations where we saw a few Houses, here is a rich Soil tho' I believe it is no where very deep, being no more than a layer of Earth over the Lava of

which I think it is probable the body of the Island is composed. Their plantations are divided from each other by thick low walls built with Lava. Here we found the Breadfruit Trees, Plantains, Taroo root, Sweet potatoes, Ginger root and Sugar Canes; it may be remarked that the Otaheiteans cultivate the Taroo root in swampy Ground & take much pains to bring a Stream of water to run over the Beds, whereas these people plant it in a dry soil on the side of the Hills & we thought it equally good with that of Otaheite, tho' we judged before that the root wou'd not grow except in Swamps. After leaving their Plantation[s] which cover the sides of the Hills we met with extensive pieces of Ground covered with very high Fern, & following the Path we entered a thick Wood at the distance of four miles off the Sea; the Underwood which grows here render[s] the Wood impassable every where out of the common Paths, many of which we met intersecting each other in various directions. There are various Sorts of Trees here, the principal & largest of which is that called by the Indians Koa; it is a red wood like Mahogany, of this they build their Canoes, the Trunk of it is not tall or strait, the branches spread out wide. *The Woods are filled with birds of a most beautiful Plumage & some of a very sweet note, we bought many of them alive of the Indians who were employed in catching them with birdlime smeared on the end of a long rod which they thrust between the branches of the Trees. The bird lime is made of bread fruit & the milky Juice of a small thorny tree which they call Kepaw.* After having followed the path four [or] five miles in this Forest we came to a place where we found three Men building Canoes with temporary Sheds for their Residence; by the Interest of our Companion Canicoa we got a Pig roasted for dinner but they had no roots of any kind to give us. Canicoa, & another Indian who carryed water for us all the way in a Gourd Shell, formed a kind of a Cap made of fern to shade them and keep the flies off their Faces, & it coming on to rain soon after every one procured a large Plantain leaf which he held over his Head & served as an Umbrella—so that a naked Indian in the forest is never at a loss for temporary resources to shade him from the heat of the Sun & to defend him from Rain. We turned back about 1 o'Clock & arrived at the Town of Kavaroa in the Afternoon, where Canicoa procured us a barbequed Hog & roots on which we made an excellent repast after our Journey.

Samwell confirms in this account that many birds were purchased alive of the Hawaiian bird-catchers on this occasion. Some of the birds so obtained may well have been among the specimens which, as we will see later, he sold at public auction in London in 1781.

The Second Excursion, 26 January–30 January 1779

The second known excursion was the most extensive and certainly has been the most

written about since. It was undertaken by several persons from both ships who set out on the afternoon of 26 January 1779. Details of the exact number of Europeans and exact purpose of the excursion vary among the available accounts. In the official account of the voyage, King gave no details of the personnel involved but in his *Journal*, as published by Beaglehole (1967:513–514), he recorded the departure as follows:

... leave was ask'd & granted for a party to go into the country & to attempt reaching the Snowy Mountain;

This Party consisted of the Resolutions Gunner, Mr Vancouver, a young gentleman of the *Discovery*, Mr Nelson sent out by Mr Banks to botanize; the Corporal we had on Shore, & three other men, they carried no arms of any kind, & set out at $\frac{1}{2}$ past 3 this Afternoon with 4 of the Natives.

Samwell recorded (Beaglehole 1967:1169) the departure thus:

To day the Gunner of the *Resolution* was sent by Capt'n Cook, accompanied by the Gardener who is on board the *Discovery* & two or three other Men, on an Excursion for two or three days up the Hills to examine the Productions of the Island.

Ellis later recorded (1782, vol. 2:91) that this party had been sent by Captain Cook with directions to make what observations they could relative to the soil and produce of the place. Rickman wrote (1781:316) that the purpose of the excursion was to obtain a nearer view of the snowy mountain and that Mr. Nelson and four other gentlemen set out on this expedition. John Ledyard, Corporal of Marines, was a member of the exploring party. He later stated (1783:117): "On the 26th of January I sent a billet on board to Cook, desiring his permission to make an excursion into the interior parts of the country, proposing if practicable to reach the famous peak that terminated the height of the island." Beaglehole expressed the opinion (1967:ccix) that Ledyard did not hesitate to enlarge on his own part in the voyage. His claim to have instigated the expedition may have been such an enlargement. However, Ledyard also recalled that Cook "desired the gunner of the *Resolution*, the botanist sent out by Mr. Banks and Mr. Simeon Woodruff to be of the party."

It is not clear therefore whether the prime purpose of this expedition was to reach Mauna Loa or to examine the "productions" of the island. It is clear however that the party attempted to achieve both. The exact number and identity of the Europeans involved must, it seems, remain a mystery, although the identity of five members appears to be established. Robert Anderson, gunner on the *Resolution*, clearly was the leader. He was accompanied at least by George Vancouver, midshipman on the *Discovery*; the gardener David Nelson of the *Discovery*, sent out by Banks to botanize; John Ledyard, Corporal of Marines on the *Resolution*; and Simon or Simeon Woodruff, gunner's mate on the *Discovery*.

The return of the party on 30 January was recorded by Samwell (Beaglehole 1967:1172):

In the Afternoon the Gunner of the *Resolution* with his Party returned; they pursued their Journey towards the snowy mountain but did not get to the top of it, which they judge to be between twenty and thirty miles from the Sea Side; there was no Path & the ascent of it is covered with thick underwood, they met with nothing remarkable in their Excursion; being obliged to sleep under the shelter of the Trees on the top of the first Mountain they found it very cold at Night. They went the same path that we did the 24th and do not seem to have gone much further. Of that Excursion a short account is given.

King, who "was never myself above 3 miles into the body of the Country," gave a detailed account (Beaglehole 1967:520–524) of the activities of Anderson's party but he does not mention birds or natural history collecting. However, Ledyard later recorded (1783:120–122) the following of interest for present purposes:

On the first day out the party came to an area "thick covered with wild fern, among which our botanist found a new species." Late the following afternoon, when in the forest, they "spent the remaining part of the day as humour dictated, some botanizing and those who had fowling pieces with them in shooting" The following day he recorded:

Our Botanist today met with great success, and we had also shot a number of fine birds of the liveliest and most

variagated plumage that any of us had ever met with, but we heard no melody among them. Except these we saw no other kind of birds except the Screech-Owl, neither did we see any kind of quadrupede, but we caught several curious insects.

No doubt the owl Ledyard saw was the diurnal pueo *Asio flammeus sandwichensis*, which had been recorded at Kauai the year before, but no specimens are known to have been collected on the voyage. It seems from Ledyard's account that a number of bird specimens were collected in the course of this excursion and this appears to be confirmed by Rickman, who recalled (1781:316) of this party that "the only advantage that accrued from their journey, was, a curious assortment of indigenous plants and some natural curiosities, collected by Mr. Nelson." We know that the plant specimens so collected by Nelson found their way into the Banks collection (Britten 1916:351-352; St. John 1976a:4-5, 1976b:7) and no doubt any birds obtained by him did likewise.

The Third Excursion, 27 January-30 January 1779

A third party set out inland from Kealakekua Bay on the morning of 27 January 1779. It was this party King referred to in his Journal when he said (Beaglehole 1967:514):

A Smaller party of our Gentlemen went into the Country; the exceeding quiet behaviour of the Natives on shore took away all Ideas of Apprehensions in trusting themselves amongst them in any situation.

Ellis later wrote (1782, vol. 2:91) of this same party that "several gentlemen of both ships made an excursion into the country." He published an account of the excursion based on information given him by an unknown member of the party. The following extracts from this account are relevant:

On entering the wood, they were entertained with the notes of a variety of birds, which rendered their walk doubly pleasing; and having several boys with them, who professed the art of bird-catching, they were set to work, and in a short time procured several. They use a kind of bird-lime for this purpose, and are besides very expert in imitating the different notes of birds.

Later in the narrative Ellis recorded that the party

... set off for their last night's habitation, and in their way put up several flocks of black and white plover, that were feeding in the plantations.

These birds were undoubtedly the Pacific Golden Plover *Pluvialis dominica fulva*. Latham (1785:194) relied on this reference by Ellis for his information that the "Golden Plover" was met with by "our last voyagers ... at Owwhyhee."

The third inland party arrived back at the ships on 30 January shortly after the return of the main inland party which had set out the day before it. The party of 27 January comprised five Europeans. We do not know the identity of all of them but the identity of at least two, possibly three, can be ascertained from records which are still available but which have not previously been published, as far as I am aware.

One of the known members of this third inland party was Thomas Edgar, then Master of the *Discovery*. He included a brief narrative of the excursion in his *Log* (Edgar 1778-1779, folios 54v-55v). Beaglehole has pointed out (1967:clxxxiv) that, as a writer, Edgar suffers from a distressing habit of punctuating with innumerable full points, sometimes after every two or three words, and from an equally distressing habit of prefixing every final *s* (and sometimes other letters) with an apostrophe. Such peculiarities are evident in the account in question. Like Beaglehole, I have deleted some of them from Edgar's record of the excursion, which follows. The italics are mine.

Owhyhe is a very Mountainous Isl^d. the tops of the interiorer Mount^{ns}. being commonly cover'd with snow during our stay in Karregagooa Bay. I made several excursions in & about the Island and found it very pleas^d. the Hills rising gradually from the water side with an easy ascent. on the top of the first is a beautiful Plain with several plantations very well cultivated & sown with Tarrow sweet potatoes & c the whole place being shaded with groves of Breadfruit & other large trees which yields the nut of which the natives use as candles. they give a tolerable good light. the tarrow which in all the Society & Friendly Islands grows in swamps but are here planted on the hills in dry ground

& very excellent they are. After you are over this plain the ground rises gradually is barren and seemingly hollow in several places shaking & echoing as we walk'd over it. about 4 or 5 miles up from the waterside begins the borders of a very fine wood of several sorts likewise many different kinds of firs some twelve & fourteen feet high with a few plantain trees growing wild. *in this wood there is a great variety of beautiful birds* & we are told that the natives are obliged to go eight or nine miles into this wood & sometimes further before they can get a tree fit to make a Canoe. the highest trees we saw here being a coarse kind of Mohagany. these people build temporary huts where ever they find a tree to suit their purpose & finish their canoes roughly before they bring them out of the woods in order to make them light the better to carry them down. the canoes at these Islands are not like them at the Society of Friendly Isl^{ds}. these being dug out of one tree with a flatt piece of board six or seven inches broad sew'd to the gunwale all round for wash boards neatly finish'd appearing yellow like box wood. in one of our excursions up these hills we intended staying in the woods two or three days lying in some of these temporary buildings but we finding the Air to be very cold & chilly the huts so open & wretchedly bad that it was thought most prudent to return to some little huts at the end of the wood which we did & stay'd there three days it being very pleas^{ant}. this place we call'd one tree hill Mount Pleasant from its situation being on a little hillock at the dist^{ce}. of about half a mile from the wood with only one poor forlorn tree thereabouts. the dwelling houses or rather huts are two open ones at the front for the benefit of the sea breeze & one close house joining to the left of it with one close house upon each wing some little distance off. this noble mansion in any part of england would be taken for Pigsties being about that height and resembling them very much. altho' situated on a delightful spot having the wood on your back and a flatt cultivated plain on each side fronting you with a view of the sea to the S.W. ward there is no possibility of walking in the middle of the day the hills not being sheltred & the sun so intensely hot except you get into the woods where you are shaded by tall firs & lofty trees. about the hills the ground is well cultivated ginger & tumirick growing wild in great plenty. In our return to the Ships we pass'd thro' the most beautiful plantations I ever saw groves of the largest breadfruit trees interspread with plantain trees sugar cane & many other bushes of various sorts. we also saw two very good Morias or burying places differing from the Society Isles as these people bury their dead under ground & covering them with large stones, & erect a kind of monument over the tomb. on a tree close by hung two little pigs & a bunch of plantains as an offering to their gods, a house always being close to these Morias which belonging to a Priest who has the charge of these dead bodies. in our way to the Ships we came to one of the places where the Vulcano had done a considerable dale of damage. its astonishingly surprising to see the numbers of large Vaults or caves the rocks of which is almost vitricated & the waves of lava which have run under ground in many places in many places have burst out & form'd many large cavities. nothing grows here but in few places

a kind of twining weed which creeps along the rocks. the bottom of this hill is covered with lava & rocks burnt to a cinder. we have never seen on this Island any other signs of a Volcano not even so much as a smoake & I suppose it is a very long time since any eruption has happned. when we arrivd on board we found the party that set out for the flatt snowy Mountⁿ. had return'd after being out five days. they suffered greatly from want of water & the sharpness of the cold air on the tops of these Mountains they having no place to shelter themselves from the inclemency of the weather in the night time.

Another known member of the third inland party was John Law, at the time surgeon of the *Resolution*. He included a detailed account of the excursion in his *Journal* kept on the voyage, part of which still survives (Law 1778-1779). Wilson (1977:14) published a small portion of Law's narrative of the excursion. However, publishing it in toto here seems worthwhile because it forms an important part of the available records of these first European excursions on Hawaii. The following is taken from a manuscript copy in the Alexander Turnbull Library, Wellington. Alterations which appear in the copy (and presumably also in the original, which I have not seen) are omitted for the sake of clarity. Again the italics, where they relate to birds, are mine.

In the Morn went on Shore In C^o with 4 Others in Order to take a walk a little way up the Hill—for which purpose we Hired two Tou Tous to Carry Water & a Little Drop of Brandy—We Walked up the 1st Hill in a pretty good path only rather stony & passed the plantations of sweet potatoes Tauro root & Sugar Cane—No Trees till we got near 2 Mile up when there are Bread Fruit & Another Large Tree which yield the nut of which the natives use as Candles as also together with other things to stain their Cloth.

The Hill ascends very gradually all the way up except in 1 or 2 places which are by no means steep there being no valleys the tauro which I never saw but at any of the other Isles grow in swampy marshies grows here on the Hills on Dry Mould and are not when properly dressed by these people Inferior to the Yam. Ab^l. 9 O Clock we Came to a Little Hillock on which were 3 or 4 Small Houses being ab^l 3 miles from the Sea Shore—we found here the Earth to loose that surprizing hollow Sound which it had all the way coming up the Hill as also the loose stones—At this place we rested & Inquired if we could have anything by way of refreshment but as we expected, from the poorness of the Inhabitants there was neither hogs nor Fowl—after staying Ab^l an hour a Man brought up a Fowl which we purchased with

$\frac{1}{2}$ Dozⁿ fine Tarro—and set off again up the Hill accomp^d. by a few Bird Catchers who were going into the Wood to Ensnare the Birds as they all had there small Barrels of Bird Lime—at 10 we Entered the Wood after walking thro' a thick Grove of fine tall fern Bushes—we walked ab¹ $\frac{1}{4}$ of a mile In when we sat down under some of the Largest Plantain Trees I ever saw which Grow Wild—Here we breakfasted on a few dressed small Tauro together wth a Drink of Grog.

Ab¹ 11 we Sat off again when we found the farther we went on the more the Earth altered to Clay—We walk slowly till ab¹ 1. O Clock when we arrived at two S^{ll}. temporary Huts which the Builders had had made up in order to Shelter them Whilst they were making their Canoes as these People Hew their Canoes out roughly up in the Wood wherever they Can find a Tree to suit them and Carry them down to the Beach to finish which they do very Compleatly—At this place our Tou Tows made a fire roasted an Tarro & the one S^{ll}. Chicken—which was all our Stock—Whilst which was doing one of the Bird Catchers Came to us with a s^{ll}. Red Bird which he had Caught—after we had purchased it he went away again to the same sport—Ab¹ 3 O Clock our Dinner was done of which tho' there was but very little verietiy it was very good and with the help of a little grog it went down very sweat—it was time now to think where we should sleep at first we intended to sleep at thes huts but we found them so very open & wretchedly poor that it thought most prudent to return to the little valley on the Mount where we got our Tarro and fowl—Determined on this ab¹ 4 we set off with full Bellies & Light Hearts—It being all the way Down Hill but very Slippery we had a fall or two occasioned as was mentioned before by the Clay Earth—In ab¹ $\frac{1}{2}$ an hour we Arrived at a S^l Spring from which when we passed here in the morn we Got our Gourds filled—as the Water we Brought from the Beach was as it all is Brackish.

Here we took a Drink as it is remarkable Good and went on again with fresh vigour Ab¹ 5 we were Stopt again by the Hollowing of some Bird Catchers who were at their usual Employ

The manner that these Tapirre Boys or Bird Catchers Ensnare the Birds is as follows.

They generally go two together each provided with the Lime which is got from the Sap of a Small Broad leaved Tree growing in great numbers wild in the Woods—when they come to where the birds are pretty numerous they Both of them Mount a Different Tree having that Tree on which the Birds may be On between them. They fix on a High & Extreame Branch to place the Lime and stay Hidden in the leaves whistling in Order to Decoy the Birds—which the most Commonly Do—tho' at the same time I have seen a great many Boys come home Birdless.

The trees which they go up are generally The Highest as I suppose there they have the best Sport—There are not a very many kinds of Trees here I believe tho' I leave that to those people who Acquainted with them kind of things as I know nought of it—To Continue Before 6 we arrived at Mount One Tree (a name given to the village we got the Tarro at from there being only one forlorn Tree thereab¹.) Here we sat ourselves down &

agreed with our poor Old Host for one of the Houses to sleep in—Our Tou Tows Lighted the Oven & Heated the tauro together with a few Broiled ripe Plantains—with which we made an Agreeable Supper tho' determined to morrow to go a Little more into the Cultivated part of the Country & feed more Luxuriously—We went to Bed ab¹ 9 O Clock: and put the Lights out as we had the Candles which I spoke of before, burning since Sun Set.

The manner in which these nuts are made use of is by making a hole in each of ab¹ 6 or 7 of them (or as many as you please) when done take a s^{ll} twig and point it thro' them all one after another and the Candle is made—when wanted to be used they light the 1st on the twig and when that is burnt out (which is in ab¹ 5 minutes) it's remaining flame Communicates to the Second nut and so on to the Third—till the Candle is quite expended—when they light another if wanted.

Ab¹ 7 O Clock AM. Awaked after passing rather a Colder night than I expected as our House was pretty Close but together with Our thin Cloathing & the Land wind Coming from the mountains we passed rather a Disagreeable night—We Breakfasted off some Tauro & ripe Plantains & ab¹ 10 Set off with an Intention to visit a village with a few Hogs or Poultry in it In $\frac{1}{2}$ an Hour we Got to one where we Immediately bought 2 Small Hogs & Bread Fruit & some Cloth for Covering in night time but finding so many Inhabitants at this place we determined to go again to Mount One Tree—which we reached before noon—i-e- Friday 29th Jan^y/79

Saturday 30th Jan^y—When we had arrived at our Hospitable Mansion our Two Tou Tows Light'd the oven & Dressed one of the Pigs—

Here we found that a man had come & taken away 2 Toi's from our old Host that we gave him for Our Lodgings so that he may be well called a poor Old Man to Suffer any Body that Comes up here to take from him his Own—as no Arees of any rank I believe Ever trouble much the Hills—Ab¹ 3 we dined & very well too having plenty to share we Treated 3 Little Boys that I suppose hardly ever tasted Pork before in their life times—they seemed to be very happy to be taken notice of & were from our usage to them very sorry when we left them.

After Dinner 3 of the party went to the So Wrd in order to strike into a wood & see if they C^d not penetrate to the other side of it to see what there was.

They returned but found the wood so Immoderately thick & strewed with Under wood & firn that it was totally Impassable—Before Dusk we emp^d. ourselves in rebuilding & rep^d. our House with more thatching—in order to make it warm if possible but we did not mend it much as myself (tho' not so cold as the preceding night) was rather UnComfortable tho' at the same time I had a piece of Cloth for a Covering—But we made a good Supper first with some Cold Pig.

AM. Before Breakfast we walked ab¹ & were amused by the tricks of Some Little Boys, they Each of them had the Branch of a Cocoa Nut Tree on which they slid (sitting on their rumps) down a Steep Hillock of ab¹ a Cable's Length they Strew^d Dry Grass in the path way & by the freq^t Sliding on it had become quite

slippery. Some of them had two Cocoa Nuts Branches fanned parallel together at ab^t 6 Inch^s from Each Other—on which they placed themselves laying flat on their Belly & Going head foremost down the Hillock at a most astonishing rate so fast that at first to me It appeared quite frightful—After these little Trojans have Descended they fag up wth their Plaything in their Hands & away down again

Sunday, 31: Jan^y: The remaining part of the heat of the Day we stayed Under a Shed till Dinner time when we had Served up 2 Pigs etc but no Grog as we had expended it all, however we had a very good Substitute which was Excellent Water.

Between At 4 PM. We set off for the Ships both Sick & Sorrow at being forced to depart from such a Delightful Spot and I believe the people that we lived with of the same mind as they sometimes when we had it Come in for a piece of Pork & had our weight of Iron at the same time—We walked Gently Down the Hill passing thro' the most Beautiful Spots of Ground I ever saw—Groves of the Largest Breadfruit Trees interspersed wth Plantain Trees & Sugar Cane & many other Bushes of various Sorts—We also saw 2 very good *Morais* one of which I examined & found it differing from the Taheite ones—as those People expose the Body under a Shed Erected on Long Poles whilst these Bury Cover them wth Large Stones & Erect a kind of monument over the Tomb.

On a bye Tree hanging was 2 S^{ll} Pigs & a Bunch of Plantains—the Morai was Close Adjoining to a House which belonged to a Priest who I suppose had the charge of the Dead Man

It was Ab^t 5 O'Clock when we came to one of the places where the Volcano of this Isle had done so much damage it is Astonishingly Surprizing to see the numbers of large vaults or Caves formed (the Rock of which is entirely vitrified) formed by the Waves of Lava running under Ground & Bursting and on the other hand in many places the Lava has Stopt & Cooled which has made a Solid lump of Rock—nothing grows here but in a few places a kind of twining weed—which Creeps along the Rock & very little of that The Bottom of the Hill is Covered with Cinders of Lava Thrown I suppose in the Eruption from Above—We have never Seen on this Isle any other signs of a Vulcano not even so much as a Smoke & I suppose it is a very Long time since any Eruption has happened tho' when it did it was by no means a Small one as this side of the Isle in the different vales is entirely Black with it

It was Dusk before we arrived at the Beach all the way within a mile being prodigiously troubled with the natives who Crowded round us in a mob of near 2 or 3 Hundred.

Standing on the Beach waiting for a Canoe to Carry us On Board I observed on the Side of the Rock or Hill (which is almost perpendicular & in some places Droops over) many Small Cavities with Scantlings of Woods placed before the Holes making a Small Door or Entrance into them—and Ladders fixed to the rocks from one Hole to the other as in most places it is Inaccessible—whether these Holes were Inhabited by the poorest kind of People who Could not get Any others

better or whether by the Women & Debilitated Old Men in times of attack from an Enemy I know not but have Reason to think the former as I saw many People Climb up to them and if the poor People could get better I sh^d Suppose they w^d not much trouble such Inconvenient & Uncomfortable Habitations—There is also ab^t $\frac{1}{2}$ a mile out in the Country a S^{ll}. village inhabited only by Women the Cause I know not of—

But however we had not waited long before we got a Canoe & went off with an Intention all to Sup onb^d the Discovery—but passing by the Reso. we were Hailed & the D^r was Called on board as one of the Ship's Crew who was an Old man and had been Sick for some Time was very Bad.

This Evening a party of 6 or 7 returned to the Ships after being out for 5 Days in Order to go up to the Snowy m^{ts}. they had not reached near the m^{ts}. but had suffered greatly from the want of Water & the Cold Air.

The doctor to whom Law referred may well have been Thomas Davies, at the time surgeon's first mate on the *Resolution*. As we will shortly see, Davies apparently took some voyage bird specimens back to England and these probably went to Sir Joseph Banks.

It is clear that bird specimens were obtained on all three inland excursions, both by way of purchase from the Hawaiian bird-catchers and, on the second at least, by collection by members of the excursion itself. In addition, specimens were probably acquired at the ships or in the nearby villages. Law noted that a great many young bird-catchers came home birdless but implied that they did not always do so. King mentioned various birds as having been brought alive by the natives. No doubt such specimens were available for acquisition.

BIRD SPECIMENS FROM THE THIRD VOYAGE

On 23 October 1780, shortly after the return of the third-voyage ships, David Samwell wrote to his friend Matthew Gregson of Liverpool that "very few natural Curiosities have been brought home; there were not above 3 or 4 persons in the two Ships who made any Collection of that sort, from the great length of the voyage great part of those have been destroyed one way or other." Later, on 1 November 1780, he wrote that "very few Natural Curiosities have been

brought home in our two Ships—the whole of these few have in a Manner been monopolized by Mr. Banks” (Beaglehole 1967:1561). Samwell himself had a collection of natural and artificial curiosities which he later sold in 248 lots by public auction in London on 14 and 15 June 1781. Only two of those lots contained bird specimens and all of those were from the Sandwich Islands:

- 40 Seven red birds of a new species, from Sandwich Isles
- 245 Two curious undescribed birds, from Sandwich Isles

A manuscript note in the only known copy of Samwell's sale catalogue (Samwell 1781) indicates that Lot 245 was bought for 7s by “Mr. Hump^s”, without doubt George Humphrey, the London natural history and ethnographic collector and dealer. These Hawaiian birds may have been some of those that Samwell mentioned were purchased from the Hawaiians in the course of his inland excursion on Hawaii on 24 January 1779.

Despite what Samwell said about the paucity of natural curiosities brought home, it is clear that many bird specimens were in fact taken back to England and that most of them went to Sir Joseph Banks. On 16 June 1780, Barrington wrote to Lord Sandwich informing him “that the specimens of Natural History collected in this last voyage were destin'd both by Capt Cook & the late Capt Clerke for Sr Ashton Lever's Museum.” He begged that Captains Gore and King be directed to give at least such specimens as were collected during the lives of Captain Cook and Captain Clerke to that museum. On 3 October 1780, Barrington renewed his plea that the curiosities from the voyage go to Sir Ashton Lever (Beaglehole 1967:1558–1559).

However, Barrington was mistaken, at least as far as Clerke's collections were concerned, for Clerke in his final letter of 10 August 1779, to Banks wrote (Beaglehole 1967:1543):

I have made you the best collections of all kinds of matter I could that have fallen in our way in the course of the voyage, but they are by no means so compleat

as they would have been had my health enabled me to pay more attention to them: I hope however you will find many among them worthy of your attention and acceptance, in my will I have bequeathed you the whole of every kind, there are great abundance so that you will have ample choice . . .

I must beg leave to recommend to your notice Mr Will. Ellis one of the Surgeon's mates who will furnish you with some drawings & accounts of the various birds which will come to your possession.

William Anderson also left his collections to Banks. Samwell, in his *Journal* under the date 3 August 1778, wrote that Anderson “left his Collection of Plants & other Curiosities which he had procured this Voyage both natural and artificial to Mr Banks” (Beaglehole 1967:1130). Any bird specimens obtained by David Nelson in the course of the voyage would no doubt also have gone to Banks, at whose instigation he had been sent out. Thomas Davies, surgeon's first mate on the *Resolution*, apparently had some birds which were reserved for Banks (Beaglehole 1967:1560). Barthold Lohmann, as we will later see, had at least four specimens of *Vestiaria coccinea* which George Forster used as the basis for his description of that species (Forster 1781a). A natural history dealer named Dolmer obtained at least two specimens of *Vestiaria coccinea*, either from the third-voyage ships or from another dealer, which were later used by Merrem (1784–1786:16–18, table 4).

Shortly after the return of the ships, some natural curiosities were purchased by John White for Miss Anna Blackburn, who had a natural history museum at Fairfield, near Warrington (Beaglehole 1967:1561). However, we do not know what these natural curiosities were or what ultimately became of them (Wystrach 1977). Sir Ashton Lever apparently received some birds—we do not know what kind—from William Bayly (“who had saved a few tolerable good articles”), from whose collection he had the first choice. The bulk of Bayly's collection was apparently disposed of by sale advertised in the newspapers (Beaglehole 1967:1561). George Humphrey, who we know purchased shells and ethnographic items from the ships (Dance 1966:100, 1971:366–367; Kaeppler 1978:

47), may also have obtained some bird specimens. In addition, Daniel Boulter, a private collector from Yarmouth, is said to have "spent a day on Cook's ship and purchased many articles, probably of the crew" (Southwell 1908:116). We know from the catalogue of his museum (Boulter 1793: 1-4) that he possessed a few bird specimens which came from localities visited on Cook's voyages. Three of them were Hawaiian birds, the references being to Latham's (1790) *Index Ornithologicus*:

- 30 Hook-billed green Creeper, scarce, from Sandwich-Islands, L. Ind. p. 281, n. 4, £1 1.
- 31 Hook-billed red Creeper, scarce, from Ditto, L. Ind. p. 282, n. 5, £1 5.
- 53 Scarlet Finch, from Sandwich-Islands, L. Ind. p. 144, n. 32, 10s. 6d.

In his catalogue Boulter listed George Humphrey and Sir Ashton Lever among the donors to his museum, which was dispersed after his death to members of his family and cannot now be traced. Southwell (1908:116) considered it "almost beyond a doubt that many, if not all" of the South Sea articles Boulter mentioned had been obtained directly or indirectly as the result of Cook's voyages. Whitehead (1978:59) felt that Boulter's Hawaiian material was surely from the third Cook voyage. Boulter may have obtained his Hawaiian birds from the ships or he may have obtained them from his donors, either Lever (who had a considerable amount of third-voyage material in his museum) or Humphrey (who we know had obtained material from the third-voyage ships and from David Samwell's sale in 1781). Evidence of a third-voyage provenance for Boulter's Hawaiian birds is strong, but it is just possible that they came from a later voyage, perhaps that of Portlock and Dixon in particular.

Of those on the last-voyage ships, Anderson and Clerke are most likely to have had the largest collections of natural history specimens and, as we have seen, these all went to Banks. The number of bird specimens taken back to England after the voyage was significant. Banks received some 226 specimens which, together with the Ellis and

Webber drawings which I refer to later, represented approximately 160 species (Medway 1979:316). Included among them were a considerable number of specimens from the Hawaiian Islands which probably went to Banks principally from Clerke, since Anderson had died in 1778 and most bird specimens were not collected until the second visit to the Hawaiian Island in 1779. A few of them may also have gone to Banks from others such as Nelson and Davies.

The Solander catalogue (Medway 1979), which lists the third-voyage bird specimens and paintings Banks received, provides the only comprehensive account of bird specimens Banks received from any of the three Cook voyages. The accompanying manuscript lists (Dryander n.d., Medway 1979) contain short Latin descriptions of the then-surviving Banks bird specimens. Those descriptions are invaluable in enabling the specific identity of the specimens in the Solander catalogue to be determined with a degree of accuracy. These manuscript lists are referred to in this paper as the ms lists. From the Solander catalogue we have confirmation that Banks received 53 specimens of 14 or 15 species of birds from the Hawaiian Islands. A perusal of the Solander catalogue and the ms lists makes it apparent that Banks disposed of a number of his third-voyage bird specimens between the date when the Solander catalogue was compiled and the dates of compilation of the relevant ms lists. It seems likely that at least some of these went to John Latham and Ashton Lever. The Hawaiian birds included in the Solander catalogue are dealt with elsewhere in this paper.

The birds which Banks received from the three Cook voyages were of considerable importance scientifically because many of them became the types of the species concerned. Unfortunately, Banks dispersed the specimens widely and very few indeed are known now to survive. (Some aspects of their dispersal will be dealt with later.) Of the Hawaiian bird specimens he received from the third voyage, probably only two exist—a spirit specimen of *Vestiaria coccinea* in the British Museum (Natural History) and a mounted specimen of *Porzana sandwichensis*

in the Rijksmuseum van Natuurlijke Historie, Leiden.

Sir Ashton Lever's collection, the history of which has been reasonably well documented (e.g., Mullens 1915; Whitehead 1969: 167–169, 1978:75–76), was also of outstanding ornithological importance. It contained a great many bird specimens, including many from Cook's voyages which became types by virtue of Latham's and Gmelin's descriptions. Lever's collection was subsequently sold by public auction in London in 1806 and the specimens were widely dispersed. Most of the types have now been lost forever and the few known remaining ones (largely New Zealand and Hawaiian) are almost exclusively in the Naturhistorisches Museum at Vienna and the Merseyside County Museums at Liverpool.

At the time Latham wrote his *General Synopsis of Birds* (1781–1801), Lever had a number of Hawaiian bird specimens in his collection. It appears that the amount of third-voyage ornithological material he received from Bayly was probably insignificant. However, he probably also received some bird specimens which had been collected by other third-voyage participants and it has been suggested that Banks may have later given him some further specimens.

The descriptions of the several Hawaiian bird species which appear in Latham's *General Synopsis of Birds* were based on specimens which could only have been collected on Cook's third voyage. In this major work, Latham set out to describe all of the then-known species of birds, including a number which had been newly discovered in the course of Cook's recently completed voyages of circumnavigation. For describing the latter species, Latham relied primarily on specimens then in the Banks collection and the Leverian Museum and also on a very few in the British Museum and some in his own collection (Medway 1976:52), most of which he had probably received from Banks. For locality data, he was obviously dependent on the information he received with the specimens he examined. It is clear that the locality of some specimens must have been wrongly assigned and that this incorrect information

was innocently used by Latham who, of course, had no personal knowledge of the origins of the specimens in question. Stresemann has pointed out (1950:81) that specimens in both the Banksian and Leverian cabinets were incorrectly labelled, a fault which my research discloses was more common with the Leverian material than with that of Banks.

As far as Hawaiian birds are concerned, it does seem that Latham's "Tropic Crow" and "Sandwich Thrush," which he described from specimens in the Banks collection, were both incorrectly labelled as being from the Sandwich Islands. Three other species Latham described he also wrongly attributed to the Sandwich Islands, no doubt for the same reason. It seems appropriate to deal with those species here.

The first was his "Black-headed Shrike," which he described and illustrated (1781–1782:165, no. 12, pl. 6) without giving the whereabouts of the specimens on which the description and illustration were based. I have not located such a specimen in the Banks third-voyage bird collection (Medway 1979). It may have been in the Leverian Museum. Stresemann (1950:81) identified this bird as *Brachypodius atriceps* [= Black-headed Bulbul *Pycnonotus atriceps* (Temminck)] from Princes Island.

The second species Latham wrongly attributed to the Sandwich Islands was his "Blue-crested Parrakeet," which he described (1781–1782:254, no. 58) from specimens then in his own collection and in that of the Leverian Museum. This is in fact the Blue-crowned Lory *Vini australis* (Gmelin, 1788) from the Tonga Islands. Banks received seven specimens from the third voyage, and their localities were correctly identified (Medway 1979:320). Latham probably saw the Banks specimens (and his own specimen may originally have been one of them), but it seems that he relied on incorrect locality data with the Leverian specimen.

The third such species was Latham's "Black-crowned Bunting," which he described and illustrated (1783:202–203, no. 49, pl. 45) from a specimen in the Leverian Museum, saying that it inhabited the Sand-

wich Islands. It is in fact the Golden-crowned Sparrow *Zonotrichia atricapilla* (Gmelin, 1789). There is no doubt that the locality for the Leverian Museum specimen should have been Sandwich Sound. Banks received one third-voyage specimen from there, and Ellis folio 81 shows a bird from the same locality (Medway 1979:335).

On the other hand, wrong locality attributions have sometimes been made because Latham has been misquoted. As an example, Sclater (1871:360), relying on Dole (1869:301, repeated in 1879:49), incorrectly said that Latham had attributed *Emberiza sandwichensis* [= *Passerculus sandwichensis sandwichensis* (Gmelin, 1789)] to the Sandwich Islands because that locality had been confounded by Latham with Sandwich Sound. But Latham in fact had stated that his "Sandwich Bunting" (1783:202, no. 47) inhabited Unalaska and Sandwich Sound.

The ultimate fate of Latham's specimens is not known. He himself wrote in 1831 that his birds were, in general, dispersed when he left Kent in 1796 (Mathews 1931:473) but he retained some specimens at that time. As we will see, in 1806 at the sale of the Leverian Museum, he purchased Lots 2790 and 3070, which were specimens of *Drepanis pacifica* and *Vestiaria coccinea* from Hawaii. The Earl of Derby (then Lord Stanley) purchased a number of specimens from Latham between 1811 and 1815 but none of these appear to have been from Cook's voyages (Derby n.d.). Latham's collection of British birds was purchased by Edward Donovan (1817:6), whose own collection was sold by public auction in London in 1818 (Mullens and Swann 1917:172-174).

It is appropriate to mention that Sarah Stone is known to have drawn a number of bird specimens from Cook's voyages at a time when those specimens were still in the Leverian Museum. Several depict Hawaiian birds. Three of them—of *Moho nobilis*, *Vestiaria coccinea*, and *Hemignathus obscurus*—have been reproduced by Force and Force (1968:47, 49, 51) from originals in the Bishop Museum. In addition, there are five original watercolor drawings by Stone of Hawaiian birds in one of the volumes in a set of the

official accounts of Cook's voyages formerly owned by Thomas Pennant and now in the Dixon Library, Sydney. Three of these drawings (Q77/37, opposite pp. 118, 119, 120) are virtually identical to those reproduced by Force and Force. The other two (Q77/37, opposite pp. 117, 121) are of *Vestiaria coccinea* and *Psittirostra psittacea*.

BULLOCK'S MUSEUM AND HAWAIIAN ORNITHOLOGY

No account of the Hawaiian ornithology of Cook's third voyage would be complete without a consideration of the part possibly played therein by William Bullock. Ten or eleven specimens of eight Hawaiian bird species were included in the sale of his collection in London in 1819. Sharpe considered (1906:231) that there could scarcely be any doubt that some of Bullock's Hawaiian bird specimens were from Captain Cook's voyages and were doubtless the originals of those figured by Ellis. As we will see, these views are not supported by the available evidence.

Accounts of Bullock and his museum have been given in some detail by earlier writers (e.g., Iredale 1948; Kaeppler 1974; Mullens 1917-1918; Sharpe 1906:208-245; Shepperson 1961; Sweet 1970; Whitehead 1969:169-171, 1978:62-63). Suffice it here to say that, from about 1795, Bullock was the owner of a museum in Sheffield, afterwards Liverpool, moving to London in 1809. After unsuccessfully offering his entire collection to both the University of Edinburgh and the British Museum, he sold it by public auction in some 3342 lots (a large proportion of which consisted of birds) over 26 days between 29 April and 11 June 1819.

Whitehead says (1969:171, 1978:75) that several Cook birds from Bullock's sale are still extant. Lysaght (1959:304, 325) mentions one or two more. I have indicated elsewhere (Medway 1979) that it is possible some of Bullock's birds were from Cook's voyages, but that their identification as specimens originating from such voyages is a matter which must be approached with great caution. As far as his birds are concerned, I agree

with Kaeppler's contention (1974:69), made in relation to his ethnographic items, that "in order to state with any certainty which items from the 1819 sale can be attributed to Cook's voyages, each item must be traced to its acquisition by Bullock."

From time to time Bullock did claim to have possession of birds which had been collected on Cook's voyages.

In the fifteenth edition of the *Companion* to his Museum (for full details of Bullock's various publications see Kaeppler 1974), Bullock wrote (1813:66) of his White Sheath Bill:

This curious Bird, the only one of the genus and the only specimen presumed to be in Britain, was brought from New Zealand by Capt. Cook, and has, with many other valuable subjects of Ornithology collected during the voyages of that celebrated circumnavigator, been lately added to this Museum by the liberality of the Royal College of Surgeons.

In the seventeenth edition of the *Companion*, when writing of petrels (1814:53), he claimed to have "a very extensive collection of these remarkable marine birds, principally collected by Captain Cook . . ." In his 1817 booklet on preserving methods, he wrote (1817:iv) that "many of the specimens have been prepared upwards of forty years (among these are the invaluable collections made by Sir Joseph Banks, in his voyage of Discovery with Captain Cook)." Later in the same publication (1817:32), when speaking of his bird collection, he wrote:

This department of the Museum has lately been enriched (through the liberality of the Royal College of Surgeons) by the entire collection made by Sir Joseph Banks and Captain Cook, during their voyage of discovery; among which are many unique and perfectly new subjects.

In his sale catalogue, Bullock mentioned 11 lots as containing bird specimens which had been brought by Banks or Cook. "Many" of the parrots for sale on the 14th day were, he said, "brought by Sir Joseph Banks in his Voyage of Discovery with Captain Cook" (1819:86) (but only four of the 134 lots in that day's sale are specifically mentioned as having been brought by Banks). The annotated copy of the sale catalogue in Cambridge

contains manuscript notes which indicate that some nine other bird lots had been "brot by" Banks, or were "from" Banks or were "brot home" by Banks or had been "brot" by Cook. [Newton (1891:45) thought that the prices and buyers' names are in the handwriting of John Latham.] Such annotations certainly cannot be accepted as proof in themselves that the specimens referred to came from Cook's voyages. It was an uncritical acceptance of the validity of one of them which led (erroneously in my opinion) to the conclusion by several subsequent writers that Bullock's White Gallinule (Lot 60, 17th day, the specimen now in the Merseyside County Museums at Liverpool) was collected in New Zealand by Banks on Cook's first voyage.

In order to test the validity of these various claims it is necessary to consider, among other things, two donations made by Sir Joseph Banks in 1792. Their complicated history has been given to some extent by Whitehead (1969:165-167, 1978:81-82) and Burton (1969) but it is necessary to take it further for present purposes.

According to William Clift (in Shaw 1806), Banks in 1792 divided by donation "all his Collection of Zoological Specimens" between the British Museum and John Hunter's collections. The latter afterwards passed to the Company of Surgeons (later the Royal College of Surgeons). Clift, who was at that time curator of Hunter's collection, said that the portion which went to Hunter (called by Shaw in his 1806 catalogue "The New-Holland Division," comprising 343 items, of which 104 were birds) consisted "almost if not intirely of Specimens collected by Sir Joseph Banks, during his voyage with Capt. Cook." That this donation to Hunter did not consist entirely of *first-voyage* specimens is evidenced by the presence therein of at least one Hawaiian bird specimen which, if it was collected on Cook's voyages at all, could only have been collected on the third. Furthermore, we know that by 1792 Banks had received bird specimens from areas visited on voyages subsequent to Cook's, perhaps particularly from Australia. There is therefore no guarantee that all the bird

specimens included in the Banks donations of 1792 had in fact been collected on Cook's voyages.

At least in the case of the Banks donation to Hunter, we can get some idea from Shaw's catalogue of the identity of the specimens included therein. We have no evidence of the identity of the specimens Banks donated at the same time to the British Museum, although presumably that donation was similar in number and content. According to Clift (in Shaw 1806) "a great number" of these British Museum specimens went to the Royal College of Surgeons in 1809. In that year the College purchased from the British Museum a collection of unwanted material comprising, among other items, "all the articles of Natural History of Animals at present deposited in the Basement Story of the Museum . . . and all Duplicates of Natural History" (Royal College of Surgeons 1805-1844: 33-36, Whitehead 1978:61). Clift, writing much later (1836:2) of this transaction, recalled that "great numbers" of the specimens received "had become quite dry mouldy and shrivelled, and utterly spoiled, and were the first to be selected and thrown away when they came into the possession of the College." Furthermore,

By far the greater number were duplicates of what we previously possessed in a good state of preservation in the Hunterian Collection, and therefore these old and comparatively worthless Specimens were considered by us at the College only as a useful Store of Spare Specimens to cut up or dissect for the purposes of illustrating the museum lectures . . . so as to preserve Mr. Hunter's collection . . . from alteration or injury.

Clift considered that "many of the Specimens . . . were probably part of those that had been presented to the British Museum" by Banks in 1792.

In 1845 the Royal College of Surgeons donated 348 natural history specimens (Whitehead 1969:166, 1978:61), including 135 birds, to the British Museum. It has been ascertained from the catalogue of *Zoological Accessions Mammalia Aves Pisces Reptilia from 1844 to 1846* [now in the Department of Mammals, British Museum (Natural History)] that at least 72 of the birds in this

donation are clearly identifiable with specimens originally included in Shaw's "New-Holland Division," which was Banks' 1792 donation to Hunter. A further 48 or so specimens were from Hunter's general collection, but none of the remainder are identifiable as having come from other sources such as the College's 1809 purchase from the British Museum. This may well indicate that none of the bird specimens received in 1809 had been kept by the College or had survived until 1845. This is perhaps not surprising in light of Clift's above-quoted comments on the condition of these specimens at the time they were received. Only two of the bird specimens which went to the British Museum in 1845 are known now to survive—spirit specimens of *Vestiaria coccinea* from Hawaii and *Philesturnus carunculatus* from New Zealand, both probably collected on Cook's voyages (Burton 1969). Probably a few of the birds Banks originally donated to Hunter remained in the Royal College of Surgeons after the 1845 donation. About ten specimens which could possibly have come from the 1792 gift are mentioned in the list of spirit-preserved bird specimens held by the College in 1859 (Quekett 1859:104-114). Any such remaining Banks specimens were probably destroyed by the bombing of 1941 (Cope 1959:204).

It is a great pity that very few of the Banksian 1792 birds are known definitely to survive, because his donations of that year almost certainly included many birds from Cook's voyages (particularly the third), a number of which were probably type specimens (Medway 1979). The sad story of these donations seems to lend some support to Clift's allegations (related by Whitehead 1969:167) of the lack of care given at that time to bird specimens in the British Museum.

After all this, it can be said that William Bullock in 1813 did receive by exchange with the Royal College of Surgeons a few bird specimens it no longer required (*Minutes of Board of Curators of Hunterian Collection 1800-1814*, vol. 1: 259-260). Most, if not all, of these appear to have been part of the Banks donation of 1792 to the British Museum, and therefore almost certainly included birds

collected on Cook's voyages. Clift again recalled (1836:5), when speaking of the 1809 purchase from the British Museum, that

among the numerous examples of Animals and parts of animals preserved in Bottles were some skins of Birds in a dry state but not stuffed:—Mr. Bullock happening to see these specimens, expressed a desire of obtaining them with a view of rendering his then public and popular collection more complete . . . Mr. Bullock was allowed to have about six or eight, or perhaps not so many, of these old and badly preserved skins. Several fell to pieces on our endeavouring to remove them from the bottles, and others had been destroyed or much injured by moths and other Insects from being insufficiently prepared originally.

Clift could "not recollect that ever Mr. Bullock pointed out any of those birds to me afterwards in his museum, as being the Specimens that he had received from the College, which I think he very probably would have done, could he have made anything satisfactory of them." Clift thought it possible, but "not absolutely certain," that the Parrots mentioned by Bullock in his sale catalogue (14th day) as having been brought by Sir Joseph Banks were among those obtained from the British Museum. However, that "could only be known to Mr. Bullock supposing him to have a perfect recollection of all the circumstances relating to them."

Despite the alleged poor condition of these specimens, Bullock obviously seems to have been able to save a few. [Burton (1969:389) considered the two surviving spirit specimens in the British Museum (Natural History) to be in remarkably good condition but they were in the Hunterian Collection until 1845.] As Clift said, only Bullock would be likely to know which specimens he had received in the 1813 transaction. One such appears to have been the specimen of *Chionis* (already mentioned), which Bullock first referred to in the 15th edition of his *Companion* (1813:66). Latham did not mention the whereabouts of the specimens on which he based his 1785 description (1785:268–269, no. 1) of the "White Sheath-bill." However, we know from Solander catalogue entry no. 107 (Medway 1979:332) that Banks received three specimens of *Chionis minor* (Hartlaub, 1841) from the third voyage; and from ms

list 2, no. 121, and list 4, no. 20, that at one stage he also had in his possession two second-voyage specimens of *Chionis alba* (Gmelin, 1789). In 1816 Bullock recorded (1816:26) having a small Brown Owl, brought from New Zealand by Captain Cook. This was presumably a specimen of *Ninox novaeseelandiae novaeseelandiae* (Gmelin, 1788) which species had been described by Latham (1787:48, no. 39) from a second-voyage specimen then in the Banks collection (ms list 2 and 3, no. 5; list 4, no. 10). Bullock also mentioned (1816:42) possessing a specimen of the Tufted Auk "taken by Capt. Cook at Kamtschatka." We know from Solander catalogue entry no. 52 (Medway 1979:325) that Banks had received a third-voyage specimen of *Aethia cristatella* (Pallas, 1769) which Latham mentioned when describing (1785:323, no. 7) his "Crested Auk."

Bullock may also have received some bird specimens direct from Banks, since Banks was a donor to his museum, at least from 1810 (Bullock 1810:iv). Confusion over Bullock's 1813 transaction with the Royal College of Surgeons may have caused Stresemann to state incorrectly in 1951 (see Stresemann 1975:120) that, about 1812, Banks presented Bullock "with his entire zoological cabinet, full of birds brought back from Cook's second and third voyages" and to conclude that "anyone wishing to see the South Sea birds described by Latham . . . went to Bullock" (see also Stresemann 1949:248, 1950:67). However, if Clift was correct when he said that Banks had in 1792 "divided *all* his Collection of Zoological Specimens" between Hunter and the British Museum (emphasis added), then Banks would not have had any Cook-voyages bird specimens left after 1792 to give to Bullock or to anyone else.

From these considerations it would seem that only those birds actually indicated by Bullock in his *Companions* and sale catalogue as having come from Banks or Cook should be seriously considered as specimens possibly collected on Cook's voyages. The evidence indicates that Bullock had in all probability obtained any such specimens solely as a result of his 1813 exchange with the Royal College of Surgeons.

It is unwarranted to assume that Bullock purchased most of the birds at the sale of the Leverian Museum in 1806. Sharpe (1906:208) thought that Bullock had probably acquired a number of bird specimens from Cook's voyages at that sale. Stresemann (1975:120) stated in 1951 that Bullock "had acquired the lion's share at the auction of the Museum Leverianum in 1806." Whitehead too was generous when he said (1969:194) that most of the Leverian birds went to Bullock and, even more specifically (1978:63), that Bullock had acquired most of the Cook birds from the Leverian. Kaeppler (1974:69) said that Bullock purchased a large number of natural history specimens at this sale. However, she has shown that any assumption that Bullock purchased most of his ethnographic items at the Leverian sale is not correct. Any such assumption is clearly not correct for his birds either. A perusal of the Leverian Museum sale catalogue discloses that Bullock purchased very few birds at that sale and none were birds which could have been collected on Cook's voyages. Furthermore, Bullock himself never claimed that any of the birds in his sale (with one exception) came from the Leverian Museum. That exception is his Lot 61 (11th day), in relation to which he clearly states that it was from the Leverian Museum and that it was "the only ornithological specimen from that collection in the sale." Even this appears not to have been acquired directly by Bullock at that sale, for the annotated copies of the Leverian Museum sale catalogue at Middleton and Southwark indicate that the lot in question (5879) was purchased by one Spurrett, from whom Bullock presumably acquired his specimen later. There is therefore no evidence that Bullock had in his sale any bird specimens possibly from Cook's voyages which he had obtained from the Leverian Museum.

Having considered all this evidence it seems that Bullock exaggerated the position when he claimed to have in 1813 "*many* . . . valuable subjects of Ornithology collected during the voyages" of Cook and, in particular, when he claimed in 1817 to have received from the Royal College of Surgeons the "*entire* collection made by Sir Joseph Banks and Captain

Cook . . . among which are *many* unique and perfectly new subjects" (emphasis added). His 1814 claim to possess "a *very extensive* collection" (emphasis added) of petrels "principally collected by Captain Cook" is neither supported by the evidence nor by a perusal of his own sale catalogue, in which none of the petrels included therein are said by him to have come from Cook's voyages. Not supported either is his contention (1819:86) that "many" of the parrots included in the 14th day of his sale "were brought by Sir Joseph Banks, in his Voyage of Discovery with Captain Cook." Of the 134 lots included in that day's sale, Bullock mentioned only four as having been "brought by Sir Joseph Banks." Indeed, one of these (Lot 19, Horned Parakeet, *P. Cornatus*), which he claimed was the specimen described by Latham, could not have been "brought by Sir Joseph Banks from the South Sea," since it presumably was a specimen of *Eunymphicus cornutus* (Gmelin, 1788) from New Caledonia, a locality visited only on the second of Cook's voyages. However, it might in fact have been the specimen on which Latham based his description (1781-1782:248, no. 48) of the "Horned Parrot."

Kaeppler has pointed out (1974:68-69) in relation to Bullock's ethnographic items (and the same is true of his bird specimens also) that "an unwarranted assumption associated with Bullock's Museum is that all the Pacific specimens and those from the American Northwest Coast are from Cook's voyages." In this regard it must be remembered that, by the time Bullock's sale took place in 1819, a number of ships had visited the various Pacific localities touched at on Cook's voyages. Bullock recorded (1808:37 and on subsequent occasions), when talking of parrots, that "our vessels from New Holland and the Southern Islands, are daily adding new ones to this extensive and beautiful genus." Bullock no doubt had adequate opportunity to obtain (either from dealers or directly from the ships themselves) bird specimens which had been collected on such voyages. A perusal of his sale catalogue reveals that his museum was particularly rich in Australian birds, some of which Bullock said had been obtained on the

voyage of Matthew Flinders. These include Lot 69, 14th day, and Lot 127 (and perhaps Lot 128), 20th day.

We return now to the Hawaiian bird specimens included in Bullock's sale. Bullock himself claimed (1819: 127) that only one of them (Lot 37, 21st day) was "from the voyage of Captain Cook." There is no satisfactory evidence that any of the others could have originated from Cook's third voyage. Indeed we know nothing about when or by whom they might have been collected. They could have been obtained on any one of the voyages (at least of English ships) which visited the Hawaiian Islands after Cook but before Bullock's sale in 1819. (For details of those other voyages, see Judd 1929.)

The first Hawaiian bird specimen referred to in Bullock's sale catalogue was *Moho nobilis*, which was sold as Lot 109 on the 15th day of the sale (15 May 1819). The entry reads (Bullock 1819:94):

109 Yellow-tufted Bee-eater, *M. fasciculatus*

This lot was sold to Lord Stanley for 19s. A manuscript note in the Cambridge copy of the sale catalogue indicates that this specimen was "Brot by Capt'n Cook" but, as pointed out earlier, this annotation certainly cannot be accepted as proof in itself that the specimen came from Cook's third voyage. It is referred to in the second Derby manuscript list (Derby n.d.) under no. 1608. Alongside this entry is the note "P1. Col. 471." This is a reference to the illustration of *Meliphaga fasciculata* by Temminck and Laugier (1828, pl. 471) taken from a specimen in the Leiden Museum. The Earl of Derby's specimen of *Moho nobilis* from Bullock's sale is still in the Merseyside County Museums at Liverpool, with registration no. 5280. Apart from the above-quoted annotation there is no evidence which links the specimen with Cook's third voyage. Bullock could have received it from any one of the several later voyages which visited Hawaii before 1819.

Lot 101 on the 17th day of the sale (27 May 1819) consisted of (Bullock 1819:106):

101 Hook-billed Green Creeper, *C. Obscura*

This specimen of *Hemignathus obscurus* went to Conrad Temminck of Leiden for £2 2s 0. Finsch (1899:36-37) recorded it as a male specimen and noted that it was in the Rijksmuseum van Natuurlijke Historie in 1901. It is still there. This specimen did not come from the Leverian Museum, as stated by Lysaght (1959:327) and Whitehead (1969:195). Earlier I wrote (Medway 1979:341) that it was perhaps one of the third-voyage Banks specimens referred to in Solander catalogue entry no. 38. However, further investigation does not support that proposition and there is accordingly nothing which links it with Cook's third voyage.

Lot 102, also sold on the 17th day, was as follows (Bullock 1819:106):

102 Great Hook-billed Creeper, *C. Pacifica*

This specimen was also purchased by Temminck, for £4 4s 0. Finsch (1899:36-37) recorded that it was a male specimen of *Drepanis pacifica*, noting that it was in the Rijksmuseum van Natuurlijke Historie in 1901. It too is still there. Again there is no evidence which supports my earlier proposition (Medway 1979:342) that this specimen was perhaps one of those formerly in Banks's possession from the third Cook voyage.

Further Hawaiian birds were included in Lots 103 and 104 on the 17th day (Bullock 1819:106):

103 Hook-billed Red Creeper, *C. Vestiaria*

104 Ditto (male and female). The last four lots are used by the natives of the Sandwich Islands, in the manufacture of their beautiful dresses.

Lot 103 was purchased for £1 4s 0 by a Mr. Fector, who apparently purchased for Vienna (Mullens 1917-1918:137, Sharpe 1906:209). I do not know what became of this specimen.

The extant annotated sale catalogues show Lot 104 as having been bought by one Molinari for £1 5s 0. A perusal of the sale catalogue in the British Museum (Natural History) shows that Molinari purchased on 14 of the 26 days of the sale a total of approximately 135 bird lots containing some 278

specimens. In the Museo ed Istituto di Zoologia Sistematica in Turin, there is a specimen of *Vestiaria coccinea* which is the surviving one of two of that species included in a collection originally consisting of 87 zoological specimens (75 birds, 9 mammals, and 3 fishes) said to have been purchased by Franco Andrea Bonelli, Director of the Regio Museo di Zoologia, at the sale of Bullock's collection. As Whitehead points out (1978:86), a Cook-voyages provenance is indicated for 12 of the birds, and four of these, including the *Vestiaria coccinea* specimen, are still extant. However, I cannot find any reference to Bonelli as a purchaser in the annotated copy of the sale catalogue in the British Museum (Natural History). Perhaps he purchased his *Vestiaria coccinea* specimens (and the others as well) from Molinari (and perhaps other dealers) after the sale. Further research may elucidate this point.

Sharpe considered (1906:231) that there could scarcely be any doubt that some of the specimens included in Lots 101–104 of the 17th day of Bullock's sale were from Cook's voyage, and I have said (Medway 1979:323) that the two Turin specimens of *Vestiaria coccinea* may have been from Banks's third-voyage collection. However, there is no evidence which links these *Vestiaria coccinea* specimens with Cook's third voyage. Indeed, large numbers of *Vestiaria coccinea* were purchased at Kauai during the Portlock–Dixon visit of January 1787; and no doubt similar opportunities to acquire specimens were available to other ships visiting the Hawaiian Islands before Bullock's sale in 1819. His specimens could have come from any of them.

Lot 116 on the 17th day of the sale consisted of (Bullock 1819:107):

- 116 Crimson Creeper, *C. Sanguinea* (male and female)
Sandwich Isles

This lot was purchased by Temminck for £1 0s 0. Finsch (1899:36–37) identified the male specimen as being *Himatione sanguinea* and the female as being *Himatione virens* and recorded that both were in the Rijksmuseum van Natuurlijke Historie in 1901. For Bullock

to regard the two specimens as male and female of *Himatione sanguinea* is perhaps not surprising. Latham, when he described his "Olive-green Creeper" (*virens*) thought it "by no means unlikely" that it was the female of his "Crimson Creeper" (*sanguinea*). Forty years later he described *virens* as the "supposed" female of *sanguinea*. Gray (1859:8) also regarded *virens* as the female of *sanguinea*.

These Bullock specimens of *Himatione sanguinea* and *Loxops virens* are still in Leiden. Again there is nothing which links them with Cook's third voyage.

Lot 37 of the 21st day (3 June 1819) of Bullock's sale comprised the much-discussed specimen of *Porzana sandwichensis*. It was the only Hawaiian bird in the sale which Bullock himself specifically said had come from Cook's voyage. The relevant entry is as follows (Bullock 1819:127):

- 37 Rail, undescribed; from the voyage of Captain Cook

This specimen was purchased by Temminck for £1 15s 0. It is still in the Rijksmuseum van Natuurlijke Historie in Leiden as a mounted specimen in remarkably good condition. As has already been pointed out, it seems that Bullock had probably obtained any Cook-voyages bird specimens he possessed solely as a result of his 1813 exchange with the Royal College of Surgeons. Whether his specimen of *Porzana sandwichensis* came from that source, and perhaps originally from Banks (and therefore a type), will be considered later when the Hawaiian birds described from Cook's third voyage are discussed.

Lot 65 on the 23d day of the sale (8 June 1819) was (Bullock 1819:145):

- 65 Parrot-billed Grosbeak

The annotated sale catalogues in the British Museum (Natural History) and Balfour Library indicate that this lot was bought by Lichtenstein for £1 0s 0. However, for reasons pointed out by Wilson and Evans (1890–1899:86) and Sharpe (1906:236), Lichtenstein was probably a mistake. Finsch (1899:46–47) recorded Lot 65 as having been purchased by

Temminck, but it is possible that Temminck obtained it from Lichtenstein after the sale. Finsch indicated (1899:46-47) that the Leiden specimen was "Psittacirostra psittacea (Gml.) ♂ Type von P. icterocephala, Tem. Pl. col. 457 (1828)." This refers to the illustration of this Bullock specimen by Temminck and Laugier (1828, pl. 457), which was described by Wilson and Evans (1890-1899: 86, fn.) as being "absurdly overcoloured." Temminck seemed to indicate that the museum possessed more than one specimen which had been obtained from the Bullock sale, but only one specimen from that source is known to have been in the Rijksmuseum van Natuurlijke Historie and it is still there. I have said (Medway 1979:343) that this Leiden specimen may be one of the third-voyage Banks specimens of *Psittirostra psittacea*, but there is no evidence which in fact links it with Banks or with Cook's voyage.

One further specimen in Bullock's sale should be mentioned here for the sake of completeness. This was included in Lot 19 sold to Leach of the British Museum for £1 1s 0 on the 11th day (18 May 1819) of the sale (Bullock 1819:72):

19 Belted Kingfisher, Alcedo Alcyon, and an undescribed species from the Sandwich Isles

There is now no way of determining the identity of this specimen said to be from the Sandwich Isles. If it was a kingfisher, then it almost certainly did not come from the stated locality since no member of the Alcedinidae is known ever to have been native to the Hawaiian Islands.

Kaeppler (1974:69) found in relation to Bullock's ethnographic specimens that "some attributions of specimens to Bullock's Museum are simply incorrect." This conclusion is true for some bird specimens too. In this category are five Hawaiian birds in the Merseyside County Museums at Liverpool which for some reason have always been regarded as probably Cook-voyage birds purchased (presumably by the then Lord Stanley) at the sale of Bullock's collection in 1819. Their attribution as probable Cook-voyage specimens (on the assumption that

they came from Bullock's sale) undoubtedly came about because of the often erroneous belief, earlier mentioned, that items in the Bullock collection bearing a locality visited on Cook's voyages must have been collected on them. It seems appropriate to deal with those Liverpool specimens here. It has now been established beyond doubt that two of them were *not* collected on Cook's third voyage and were *not* obtained at the sale of Bullock's collection. For the remaining three, the available evidence is against their having been obtained at Bullock's sale and, while the evidence relating to their origins is less precise, they almost certainly did not come from Cook's third voyage. The readily given assistance of Dr. M. J. Largen, Keeper of Vertebrate Zoology at the Merseyside County Museums, has enabled me to determine this problem.

The five specimens in question are recorded in the Liverpool collection as:

Loxops virens virens

Loxops virens chloris

Loxops virens stejnegeri

Loxops coccinea rufa

Hemignathus lucidus hanapepe

At the outset it must be recorded that two of these specimens bear original labels prepared when they were still in the Earl of Derby's possession. Both labels read "Received from Mr. Townsend per Mr. Audubon, June 1838." The specimen of *Loxops coccinea rufa* bears one such label together with the registration no. D.4872. The other label is presently attached to the specimen of *Loxops virens virens* which bears the registration no. D.5361a although there is some reason to believe that the number, at least, may have been transposed with that from the specimen of *Loxops virens chloris* which is presently numbered D.5361.

How and when these two specimens came into the Earl of Derby's possession is quite clear. In June 1838, John James Audubon submitted to Derby a quite large collection of birds from the Hawaiian Islands and other localities which Audubon had received from John K. Townsend who, as is well known, collected in the Hawaiian Islands in 1835 and 1837 (Townsend 1839). Derby prepared a

catalogue of the birds so submitted to him and the catalogue is now in the Merseyside County Museums (Derby 1838). From this collection Derby selected several specimens which are indicated in the catalogue. Included in his selection were six specimens said to be from the Sandwich Isles, all but one of which are definitely still in the Liverpool collection, including the *Loxops coccinea rufa* and *Loxops virens virens* or *Loxops virens chloris* specimens previously referred to. Because of Townsend's association with early Hawaiian ornithology, and because not a great deal is known of the nature and extent of the collections he made in the islands, it is considered of value to reproduce here the relevant part of Derby's catalogue showing the Townsend Hawaiian specimens submitted to him by Audubon.

		SPECIMENS	
No. 80	Crimson Icterus ?	39	No. 8
79	Certhia coccinea	29	No. 9
	– Yellowhead Pyrrhula ?	7	
75	Muscicapa	7	
	– Cinnamon Fringilla ?	1	No. 13
232	Streptopelia interpres	3	
	– Unequal billed Certhia ?	11	No. 10
	– Sylvia ?	18	
	– Small yellow Icterus ?	2	No. 12
87	Fulica	1	
88	Gallinula chloropus	1	
84	Strix Brachyotus	1	
82	Cossicus	1	No. 11

The generic name *Cossicus* given to specimen no. 82 is probably a misspelling for *Copsychus*, but no members of that genus are known to have occurred in the Hawaiian Islands. The specimen itself cannot presently be located, but it is clearly neither of the *Phaeornis* specimens in the Liverpool collection.

However, the other Sandwich Islands specimens which Derby so obtained are identified in this collection as follows:

Townsend

- No. 8 *Himatione sanguinea sanguinea* (D.5359c)
 9 *Vestiaria coccinea* (D.511)
 10 *Hemignathus obscurus obscurus* (D.511c)
 12 *Loxops virens virens* (D.5361a) but probably transposed from *Loxops virens chloris* (D.5361)
 13 *Loxops coccinea rufa* (D.4872)

I do not know why only some of the Townsend specimens Derby obtained should

have been previously regarded erroneously as having been collected on Cook's third voyage or acquired at the Bullock sale. It is quite clear from what has been said that none of them were collected on that voyage or purchased at that sale.

The specimens of *Loxops virens stejnegeri* (D.5360) and *Hemignathus lucidus hanapepe* (no number), both from Kauai, bear some labels which indicate that they were collected on Captain Cook's voyage. However, we have already seen that *Vestiaria coccinea* was almost certainly the only bird species of which specimens were obtained on either of Cook's 1778 or 1779 visits to Kauai. For this reason alone it is extremely unlikely that these *stejnegeri* and *hanapepe* specimens were obtained on the third voyage.

If the specimen of *Loxops virens chloris* previously referred to was not collected by Townsend, it is extremely unlikely that it was collected on Cook's third voyage since, as we have seen, only a very brief time was spent ashore on Oahu on 28 February 1779, and there is no evidence whatever that any birds were obtained on that occasion. If, on the other hand, the *Loxops virens virens* specimen was not obtained by Townsend, then there is no evidence known to me which establishes that it was or might have been collected on the island of Hawaii during the Cook visit of 1779.

It also seems clear that none of these remaining three specimens were obtained by Derby at the sale of Bullock's collection. No Hawaiian bird specimens other than those already referred to as having been included in that sale are identifiable from the sale catalogue. Nor are any such specimens referred to in those portions of Derby's second manuscript list (Derby n.d.), wherein he sets out details of the specimens he acquired from Bullock at the 1819 sale and on other occasions both before and after the sale. This manuscript list contains Derby's acquisitions up to 1834.

The *stejnegeri*, *virens*, and *chloris* specimens were all owned by Derby. Perhaps the *hanapepe* specimen was too. With the exception of either the *virens* or *chloris* specimens (one or other of which we know originated

from Townsend), these birds must have been obtained by Derby from some presently unknown source some time between 1834 and his death in 1851. In these circumstances there is clearly no evidence whatever which links any of the five Liverpool Hawaiian specimens in question with either Cook's third voyage or the Bullock Museum.

THE BIRD DRAWINGS OF ELLIS AND WEBBER

Charles Clerke in his final letter of 10 August 1779, to Sir Joseph Banks wrote that he "must beg leave to recommend to your notice Mr Will. Ellis one of the Surgeon's mates who will furnish you with some drawings & accounts of the various birds which will come to your possession" (Beaglehole 1967:1543). These bird drawings, which formed part of a collection comprising 115 Ellis animal drawings done on the third voyage, must have been presented by Ellis to Banks very soon after the return of the third-voyage ships because the bird drawings are referred to in the Solander catalogue, which itself must have been compiled very shortly after the return of the ships (Medway 1979: 316). A letter dated 23 January 1782 from Banks to Ellis (quoted in Smith 1911:52-53) indicates that Banks ended up paying £50 for these drawings as a result of Ellis having fallen into financial difficulties following the unwise publication of his account of the third voyage before the official account appeared.

I do not presently know how the Webber bird drawings came into the possession of Banks. However, they formed part of a collection of 46 Webber bird and fish drawings done on the third voyage which Banks must also have received very soon after the return of the ships because the Webber bird drawings, like those of Ellis, are listed in the Solander catalogue.

Both the Ellis and Webber zoological drawings which went to Banks were included by Dryander in his printed catalogue of the Banks library (Dryander 1796-1800, vol. 2: 17). All these drawings went with the Banksian library and collections to the British Museum in 1827 (Miller 1973:226). However, of these two sets of drawings only those of

Ellis went with the natural history collections to the British Museum (Natural History) in 1880, the Webber drawings being overlooked and remaining behind in the Department of Manuscripts in the British Museum, from whence they were transferred to the Print Room in 1913 (Lysaght 1959:255).

It is not clear whether Latham, when preparing his *General Synopsis of Birds* (1781-1801), saw the Webber bird drawings in the Banks collection. He does not appear to refer to them in that work. However, he certainly saw the Ellis bird drawings because he used Ellis folio 57 of the White-fronted Tern *Sterna striata* Gmelin, 1789 from New Zealand as the basis for his description and illustration of the "Striated Tern" (Latham 1785:358-359, no. 10, pl. 98). On the other hand, it is clear that Pennant definitely saw both the Ellis and Webber bird drawings when preparing his *Arctic Zoology* (1784, 1785, 1787). When recording that "Kamtschatka" was a locality for his "Canada Nuthatch" (*Sitta europaea albifrons* Taczanowski, 1882), he referred (1785:281, fn.) to "a small collection of drawings made in that country by one of our voyagers." This must be a reference to the Ellis bird drawings, folio 21 of which is of this species (which Webber did not illustrate among his Banksian bird drawings) and bears the locality "Kamtschatka." When describing (1785:346, no. 207) his "Prib Chatterer" (*Bombycilla garrulus pallidiceps* Reichenow, 1908), Pennant said that "the navigators found them, September 1778, on the western coast of America, in lat. 64.30. : long. 198.30," information which he must have obtained from Webber folio 110 (Medway 1979:335). Also it seems that a locality Pennant gives (1785:424, no. 328) for his "Canada Titmouse" (*Parus cinctus lathamii* Stephens, 1817) must have been obtained from Webber folio 105 (Medway 1979:338). There may well be other examples in *Arctic Zoology* of Pennant's use of the Webber and Ellis drawings.

However, after their use by Pennant and reference thereto by Dryander, the Webber bird drawings drop out of sight and to the best of my knowledge are not referred to again until they were rediscovered and subsequently identified by Lysaght (1959:256,

339–344). She thought that the Webber drawings of birds and fishes which went to Banks may have been part of a larger series that was broken up for some reason. Some confirmation of this may be provided by the presence, in the British Library, of two further third-voyage bird drawings bound in with Webber's landscapes (Lysaght 1977:45) and, in the Dixon Library, Sydney, of a watercolor drawing of a "Frigatebird" signed "J. Webber f. 1777" (Beddie 1970:354). In fact this is an illustration of the Red-tailed Tropic Bird *Phaethon rubricauda* (Gmelin, 1789). In addition, L. C. Rookmaaker has recently drawn my attention to the presence, in the Gordon Atlas in the Rijksmuseum, Amsterdam, of an original drawing of *Vestiaria coccinea* signed by Webber and dated 1778, the history of which will be documented elsewhere. It seems that, although Webber's natural history drawings were only incidental to his landscape and figure work, more hitherto unknown natural history drawings by him may still exist and may appear with the passage of time.

Seven of the 38 Webber bird drawings formerly in the Banksian collection represent Hawaiian species:

Folio 108 – *Loxops coccinea coccinea*

Folio 128 – *Loxops virens virens*

Folio 129 – *Drepanis pacifica*

Folio 130 – *Hemignathus obscurus obscurus*

Folio 131 – *Moho nobilis*

Folio 132 – *Himatione sanguinea sanguinea*

Folio 133 – *Vestiaria coccinea*

In addition, folio 115 is of a Pacific Golden Plover *Pluvialis dominica fulva* said to be from the Sandwich Isles but the date "1777" is wrong for that locality.

Three of these Hawaiian drawings (folios 108, 128, and 130) have been reproduced to date, all by Beaglehole (1967, pls. 74, 75, 76). Altogether, as far as I am aware, only nine of the Banksian Webber bird drawings have so far been published, all in black and white. They are the three mentioned plus folios 109 (also by Beaglehole 1967, pl. 77) 105, 110, 117, 126, and 137 (Pearse 1968).

The Ellis bird drawings have received more attention over the years than those of Web-

ber, probably because Webber's were not transferred to the British Museum (Natural History). The first published attempt to identify any of the Ellis bird drawings was by G. R. Gray (1844–1849) who later referred to them as being "a series of Zoological Drawings made during Cook's Third Voyage in the years 1776–1779, in the Banksian Collection of the British Museum" (1859:4, fn.). Wilson and Evans (1890–1899) referred to several of the Ellis Hawaiian bird drawings and published what they said was a facsimile copy by Frohawk of Ellis folio 70 of the Hawaiian Rail. In 1906 Sharpe listed and identified the Parkinson, Forster, and Ellis drawings then in the British Museum (Natural History) (Sharpe 1906:173–208). Stresemann initially (1949, 1950) relied on Sharpe for his information on the Ellis drawings, but later he did see them (Stresemann 1953). The most thorough appraisal of the drawings in question has been that of Lysaght (1959:322–339).

Over the years different opinions of the Ellis bird drawings have been expressed. Alfred Newton (1892:466) wrote of them that "the commoner species of Sandwich-Island birds are generally recognizable, but others are so unhappily limned that even the word caricature (which always implies some likeness) seems too strong to apply to them. Nevertheless Mr. G. R. Gray ventured to determine all of them." Rothschild made very brief mention of Ellis and expressed a view similar to Newton's when he said (1893, vol. 1:v) that "a number of poor drawings of birds from his hand—among them that of the extinct *Pennula sandwichensis*—are in the British Museum." Later writers have been more kind. Sharpe (1906:199) considered them to be "very passably executed." Allen (1951:518) thought that they "are suggestive of the careful work of George Edwards and later unpublished bird drawings of John Abbot, naturalist of Georgia, for they are finely delineated, show considerable detail in the plumage, and the contours are delicately wrought. External parts, such as bills, feet and eyes, which even today are not always accurately executed, are drawn with great care." Lysaght (1959:322) considered them to be of "considerable charm and delicacy." Pearse (1968:193, 204) concurred with the

views of Sharpe, Allen, and Lysaght but considered that Webber's bird drawings are "distinctly the better." Most recently, Wilson (1977:16) considered Ellis's drawings to be "delightfully done" and Webber's, while in a similar style, to suffer from his tendency to elongate the birds' bodies. Whatever opinions may have been expressed about them, it is obvious that the value of the Ellis bird drawings (and those of Webber for that matter) should not be underestimated, for they both form a most important part of the ornithological legacy from Cook's third voyage.

Twelve of the 90 Ellis third-voyage bird drawings formerly in the Banks collection represent Hawaiian species:

- Folio 26 – *Moho nobilis*
- Folio 27 – *Drepanis pacifica*
- Folio 28 – *Hemignathus obscurus obscurus*
- Folio 29 – *Vestiaria coccinea*
- Folio 30 – *Himatione sanguinea sanguinea*
- Folio 31 – *Loxops virens virens*
- Folio 69 – *Gallinula chloropus sandvicensis*
- Folio 70 – *Porzana sandwichensis*
- Folio 77 – *Phaeornis obscura obscura*
- Folio 79 – *Psittirostra psittacea*
- Folio 85 – *Loxops coccinea coccinea*
- Folio 87 – *Chasiempis sandwichensis sandwichensis*

To the best of my knowledge, only 27 of the Banksian Ellis third-voyage bird drawings have yet been published. Whitley (1970: 58, 59, 61, 62) reproduced folios 16, 67, 78, and 95; Lysaght (1959, pl. 37b) reproduced folio 43; Pearse (1968) reproduced folios 19, 20, 32, 40, 42, 51, 60, 61, 63, 80, and 82; Medway (1976, fig. 1) reproduced folio 57; Beaglehole (1967, pls. 70, 71, 72, 73) reproduced folios 54, 74, 38, and 94; Allen (1951:518, fig. 41) and Rienits and Rienits (1968:145) reproduced folio 74. The latter (1968:135) also reproduced folio 38. All of these have been in black and white. The only Ellis Hawaiian bird drawings so far reproduced, and the only Ellis bird drawings in color so far, were done by Murray-Oliver (1975, pls. 54–57) and consist of folios 26 (*Moho nobilis*), 29 (*Vestiaria coccinea*), 30 (*Himatione sanguinea sanguinea*), and 69 (*Gallinula chloropus sandvicensis*).

Sharpe (1906:202) considered that the

Leverian Museum specimen of *Himatione sanguinea sanguinea* described by Latham was "doubtless the same one as that drawn by Ellis." This is most unlikely and certainly cannot be shown to be the case. Latham (1781–1782:739, no. 43) described his "Crimson Creeper" from specimens both in the Leverian Museum and in his own collection. We know from Solander catalogue entry no. 36 that Banks received six specimens from the third voyage (Medway 1979:323). Sharpe (1906:206) likewise thought that the Leverian specimen of *Phaeornis obscura obscura*, described by Latham (1783:344, no. 42) as the "Dusky Flycatcher," was "probably the very specimen figured by Ellis." Again this cannot be shown. There was one specimen of this species in the Leverian Museum and Banks received one from the voyage. This is evidenced by Solander catalogue entry no. 122 (Medway 1979:333). Sharpe (1906:207) also thought that the Banks specimen of *Chasiempis sandwichensis sandwichensis*, on which Latham founded his description (1783:344, no. 41) of the "Sandwich Flycatcher," was "perhaps the identical one figured by Ellis." Ellis folio 87, according to Lysaght (1959:337), illustrates a young bird of this species. Latham's "Sandwich Flycatcher" was an immature bird and Solander catalogue entry no. 142 confirms that there was only one specimen in the Banks collection (Medway 1979:337). Latham's description (1783:345, no. 43) of the "Spotted-winged Flycatcher" was based on an adult specimen then in the Leverian Museum. Only one immature specimen is therefore known to have been taken back to England and it is just possible that the Banks specimen described by Latham (the type of the species) was the same bird Ellis illustrated.

We have already seen how Sharpe also thought (1906:231) that some of William Bullock's Hawaiian bird specimens were "doubtless the originals of those figured by Ellis," a view that is certainly not supported by the evidence.

Berger (1972:ix) stated that "some of the earliest descriptions of Hawaiian birds are said to have been based entirely" on the Ellis and Webber drawings. I do not know where

Berger got this information but it is clearly incorrect. Gray's name (with no description) of *Drepanis* (*Hemignathus*) *Ellisiana* (Gray 1859:9) was obviously based on Ellis folio 28. This name was regarded by Sharpe (1885:4), Wilson and Evans (1800–1899:67), and Stresemann (1954:44) as a synonym of *Hemignathus obscurus*. More recently, Gray's name has been applied by Amadon (1950:168) and Greenway (1968:98) to the extinct Oahu 'akialoa *Hemignathus obscurus ellisianus* (Gray, 1859).

It is obvious that not all of the bird drawings executed by Ellis on the third voyage went to Banks. In 1976 the Alexander Turnbull Library in Wellington purchased a collection of drawings Ellis made on the third voyage (Murray-Oliver 1977). Included in this collection are eight folios depicting 14 species, all from the North Pacific area (Medway 1977). Only two of them depict the whole bird, the rest being drawings or line sketches of the head only or of the head, feet, and bill. It seems most likely that other Ellis drawings still exist and one day may be discovered. That this is so seems to be confirmed by the existence (last heard of in 1978 in private hands in Australia) of a finished watercolor drawing of the Purple-naped Lory *Lorius domicellus* (Linnaeus, 1766) signed "W W Ellis 1779," almost certainly drawn by him from a captive bird while the ships were at Macao in December 1779.

Three of the Webber, and all but one (folio 69) of the Ellis, Hawaiian bird drawings bear the date 1779. It is not unreasonable to conclude that all of them depict birds collected while the ships were at Kealahou Bay. The only species depicted by Webber and Ellis known to have been collected on an island other than Hawaii was *Vestiaria coccinea*, which was procured on Kauai in 1778.

King, when editing for publication Clerke's account of the Hawaiian birds, added Hawaiian names for three of them: hoo-hoo (which he wrongly assigned to *Drepanis pacifica*); cee-ee (*Vestiaria coccinea*); and akai-earooa (*Hemignathus obscurus obscurus*). Four of the Webber folios bear Hawaiian names: folio 130, *Hemignathus obscurus obscurus* (A kie-a-roa); folio 131, *Moho nobilis*

(Hoo-hoo); folio 132, *Himatione sanguinea sanguinea* (A ka-kan-ne); and folio 133, *Vestiaria coccinea* (He-ee-vee). None of the Ellis bird drawings bear Hawaiian names (Lysaght 1959). It appears that King did not get his names from the Webber or Ellis drawings. Perhaps he obtained them from the "accounts of the various birds" to which Clerke referred in his final letter to Banks.

DESCRIPTIONS BASED ON HAWAIIAN BIRD SPECIMENS COLLECTED ON COOK'S THIRD VOYAGE

At the time the third-voyage ships returned, John Latham was in the course of preparing his monumental *General Synopsis of Birds* (1781–1801), in which he set out to describe all of the then-known species of birds. He thus had the opportunity to describe many new species which had been collected on Cook's voyages, primarily on the basis of specimens which he examined in the collections of Banks and Lever. Included among these specimens were many from the Sandwich Islands and some which, as is pointed out elsewhere, were wrongly attributed to that locality. Unfortunately, Latham gave English names to the new species he described. Gmelin shortly afterward, in his edition of *Systema Naturae* (1788–1793), converted Latham's descriptions into short Latin diagnoses with Latin names and thus obtained credit as the first describer of many new species.

It has been pointed out earlier that the new Hawaiian birds described by Latham (and Gmelin based on him) were founded on specimens which could only have been collected on Cook's third voyage. Altogether, Gmelin first validly described nine species or subspecies of Hawaiian birds from Cook's third voyage, namely, *Drepanis pacifica*, *Hemignathus obscurus obscurus*, *Himatione sanguinea sanguinea*, *Loxops virens virens*, *Loxops coccinea coccinea*, *Psittirostra psittacea*, *Phaeornis obscura obscura*, *Chasiempis sandwichensis sandwichensis*, and *Porzana sandwichensis*. In addition, two Hawaiian bird species were first validly described in

Germany by Forster and Merrem on the basis of specimens which also could only have been collected on the third voyage. These species are *Vestiaria coccinea* and *Moho nobilis*. Altogether, therefore, the first valid descriptions of eleven Hawaiian bird species or subspecies are based on specimens collected in the Hawaiian Islands in 1778 and 1779. As we will see shortly, a number of these specimens still exist.

For the sake of completeness and ease of future reference, all of the original descriptions of third-voyage Hawaiian birds by Latham, Gmelin, Forster, and Merrem are reproduced in the pages which follow. It is important both historically and scientifically to know what specimens, particularly type specimens, are still extant from Cook's voyages. Because of this I also give the known history of the third-voyage Hawaiian bird specimens on which the original descriptions were based and indicate that a number of them still survive. They, along with other extant bird specimens collected on Cook's voyages, are of great historical and scientific importance, and their continued survival reflects great credit on the care and attention bestowed on them by the various institutions in which they have reposed for many years.

'iwi Vestiaria coccinea (Forster, 1781)

Vestiaria coccinea, the most striking in appearance of the surviving honeycreepers and upon which more has probably been written than upon any other Hawaiian bird, has the distinction of being the first Hawaiian bird species for which a published description appeared. The third-voyage ships returned to London in October 1780. Within months, a description of *Vestiaria coccinea* was published in Germany. It is fitting that the credit for this description should go to George Forster, who had accompanied Cook's second voyage as assistant naturalist and natural history draughtsman. Forster, then Professor of Natural History at Cassel in Germany, based his description (1781a) of *Certhia coccinea* on four third-voyage specimens that were given to him by Barthold Lohmann, a German from Speyer, who had

been on the voyage. Forster interviewed both Lohmann and Heinrich Zimmermann in Cassel and based his account of the third voyage on what they told him (Forster 1781b). Zimmermann (1781) also published his own account of the voyage. It is quite possible that the four specimens Forster used had been obtained by Lohmann at Waimea in January 1778. An account of the "rother Baumläufer von der Insel O'Waihi," based on Forster's original description, appeared in Martini (1786:459-462), wherein it is mentioned that a specimen was at that time in the Elector's Cabinet at Cassel. It seems quite likely that this specimen was one of Forster's types, but I do not know what subsequently became of it or of the other three.

George Forster's description, entitled "Beschreibung des Rothen Baumläufers von der Insel O'Waihi," dated at Cassel 16 December 1780, is as follows. An English translation of the original German has kindly been provided by Michael E. Hoare.

In meinen Händen befindet sich anjetzt ein Exemplar eines carmosinrothen Baumläufers (*Certhia coccinea*), welcher auf der neuentdeckten Insel O-Waihi überaus häufig sein soll. Obgleich die Zunge, in vier Exemplaren, die mir bisher zu Gesicht gekommen, gänzlich fehlt, so trage ich doch kein Bedenken, dieser neuen Gattung von Vögeln einen Platz unter der Baumläufern anzuweisen, für den sie, dem Aeussern nach zu urtheilen, bestimmt ist. Nur in der Bildung des Schnabels zeigt sich einige Verwandtschaft mit den Paradiesvögeln, in dem er zwar säbelförmig gekrümmt ist, aber nicht wie bei den übrigen Baumläufern einen scharfen, sondern einen Konvexen Rücken hat. Dass es übrigens im Geschlechte der Paradiesvögel, sowohl krumm- als geradschnäblige Gattungen gibt, habe ich in der Naturaliensammlung Sr. Hochfürstl. Durchlaucht des regierenden Landgrafen zu Hessen, etc. zu lernen Gelegenheit gehabt. Von sieben bis acht verschiedenen Gattungen dieses noch wenig bekannten Geschlechts, sind allda eine hinlängliche Anzahl Exemplare vorhanden, woran sich zum Theil eine Beobachtung bestätigt, die ich schon in fremden Ländern öfter gemacht habe; dass nämlich die Länge und Krümmung des Schnabels, sogar an verschiedenen einzelnen Vögeln von einer und derselben Gattung, beträchtlich variiren kann. Dies sind kleine Schwierigkeiten, welche sich gegen alle Systeme empören, und uns freilich unwidersprechlich darthun, dass die Natur nicht immer nach menschlichen Begriffen von Ordnung, Harmonie und Einförmigkeit zu arbeiten scheint; mithin, dass unsre Methoden nur allenfalls Leitfaden in ihrem unermesslichen Labyrinth sind.

Unser neuer Baumläufer hat einen dünnen ziemlich stark gekrümmten und beinahe zolllangen Schnabel.

Er läuft spitz zu, die obere Kinnlade ist etwas breiter, aber nicht länger als die untere; beide sind ganz, und ohne allen Einschnitt oder Zahn. Die Farbe des Schnabels ist eine ins gelbliche fallende Fleischfarbe. Die Nasenlöcher liegen dicht am Kopfe, sind ziemlich gross und eirund, oben und nach vorne zu mit einem erhabenen Rändchen versehen, welches vielleicht das Ueberbleibsel eines Blättchens sein kann, womit diese Oeffnungen bei verschiedenen Landvögeln der Südseeinseln halb verdeckt sind.

Die Füsse sind fleischfarben, oder von der Farbe des Schnabels. Für die Grösse des Vogels sind sie ziemlich lang und stark; folglich ist er in diesem Betrachte von denjenigen Baumläuferarten verschieden, welche mit den Honigsaugern eine nähere Verwandtschaft haben. Auf der Reise um die Welt habe ich indessen bereits ähnliche Abweichungen an andern Gattungen bemerkt, jedoch ohne mich dadurch für berechtigt zu halten, die Zahl der Geschlechter zu vermehren. Ein Baumläufer aus Tongatabu, mit fleischigen Bärten oder Lappen, wie der Haushahn deren hat, und zwei Gattungen aus Neuseeland, welche dort die besten Sangvögel sind, zeichnen sich eben so, wie die vor mir liegende, durch stärkere und längere Füsse aus. Die Zehen an dieser Art sind dünn, drei vorwärts und einer nach hinten zu gekehrt. Die Krallen sind klein, ausgenommen die am Hinterzehe, welche etwas stärker und gekrümmter ist. Die Farbe der Federn ist am ganzen Leibe eine brennend rothe, zwischen Zinnober und Scharlach, überaus glänzend und schön. An einem einzigen Exemplare, welches entweder ein Weibchen, oder ein junger Vogel sein mag, sind die Federn am Kopf und Halse mit etwas Gelb vermischt. Nur die Flügel, welche im ruhenden Zustande bis an die Mitte des Schwanzes reichen, und die zwölf Schwanzfedern sind glänzend schwarz. Die Deckfedern der obersten Reihen sind gleichwol von eben der rothen Farbe wie der übrige Leib, desgleichen der Afterflügel (*alula*) und die Ränder der untersten Reihe von Deckfedern. Von den Schwanzfedern sind doch ein Paar der hintersten, die eine ganz, die andre nur auf einer Seite, schmutzigweiss, die Deckfedern unter den Flügeln sind von eben dieser Farbe. Der Vogel ist mit dem Buchfinken, oder höchstens dem Dompfaffen, von einer Grösse; seine Länge von der Schnabelspitze bis an das äusserste Ende des Schwanzes beträgt $5\frac{1}{2}$ Zoll (engl.); die Breite von einer Flügelspitze zur andern $7\frac{2}{10}$ Zoll. Seine Speise ist, nach Anleitung der Gestalt des Schnabels, wahrscheinlich wie bei andern ausländischen Baumläufers, der Honig, der sich in den Blumen erzeugt. Schwerlich kann ich glauben, dass er auch Insekten frisst, wie die beiden europäischen Gattungen, die Baumklette und der Mauerspecht, welcher auch wirklich in mehrerm Betracht von der übrigen Baumläufers abweichen, und allenfalls abgesondert werden könnten, wenn man ja Aenderungen in der Eintheilung vornehmen wollte.

Die Heimath dieses kleinen Geschöpfes ist die Insel Waihi, wo einer der berühmtesten Männer unseres Zeitalters, der Seefahrer Cook, sein ruhmvolles Leben auf die unglücklichste Art beschloss. Die Einwohner dieser und der benachbarten Inseln verfertigen ihren Putz und verschiedene Kleidungsstücke von den Federn

dieses Vogels, welches daselbst ausserordentlich häufig sein muss, weil diese Arbeiten gar nicht selten sind. Hauptsächlich werden Mäntel damit über und über besetzt; das Frauenzimmer aber trägt auch Halsschnüre von eines Daumes Dicke, welche gänzlich aus solchen Federn bestehen. Eben solcher Schnüre werden bei ihren feierlichen Tänzen bis auf sieben um den Kopf gewunden.

Ein Deutscher, Barthold Lohmann, der der letzten Reise beigewohnt hat, brachte mir diese Seltenheit mit. Er hat auch eine solche Halschnur an das hiesige Hochfürstl. Cabinet geschenkt.

Description of the Red Treecreeper of the Island of O-Waihi

In my hands at this very moment I have a sample of a red treecreeper (*Certhia coccinea*), which is said to be rather numerous on the newly discovered island of O-Waihi. Although the tongue is missing completely in all the four specimens which I have seen so far, I will not scruple to give this new species of bird a place among the treecreepers, for which it seems destined, judging by the external appearance. Only in the form of the beak does it exhibit some relationship to the birds of paradise, insofar as it is indeed sabre-shaped and crooked but, unlike the other treecreepers, does not have a sharp but rather a convex ridge. The fact that there are, moreover, crooked- as well as straight-billed species in the genus of paradise birds, I have had the opportunity to learn from the natural history collection of His Royal Highness the reigning Count of Hesse. Seven to eight different species of this still little-known genus are available there as a sufficient number of specimens from among which one observation is partially confirmed which I already have often made overseas, that is, that the length and crookedness of the beak, even in different single birds of the one and the same species, can vary considerably. These are little difficulties which upset all systems and demonstrate incontrovertibly to us that Nature cannot always seem to be fashioned according to human ideas of order, harmony, and uniformity; consequently our methods are only at most guides in Nature's unmeasurable labyrinths.

Our new treecreeper has a thin, rather strongly crooked, and almost one-inch-long beak. It runs to a point; the upper maxilla is rather broader but not longer than the lower one; both are complete and without any notch or tooth. The color of the beak is a yellowish turning to flesh color. The nostrils lie close to the head and are rather big and oval; above and in front provided with a prominent little lip which is perhaps the remnant of a membrane by means of which these orifices are covered in different landbirds of the South Seas.

The feet are flesh colored or the same color as the beak. Compared with the size of the bird, they are rather long and strong; in consequence it is in this regard different from those bird types which are more closely related to the honeyeater. On my voyage round the world, I observed nevertheless similar variations in other species but did not consider myself justified in increasing the number of genera. A treecreeper from Tongatabu with

fleshy wattles, like those of the household cock, and two species from New Zealand, which in that country are the best songsters, distinguish themselves like the ones before me by stronger and longer feet. The toes of this species are thin, three turned forward and one backward. The claws are small, except for that on the rear toe, which is somewhat stronger and crooked. The color of the plumage over the whole body is a burning red, between cinnamon and scarlet, completely glossy and beautiful. On one single specimen, which might be either a female or a young bird, the feathers on the head and neck are mixed with some yellow. Only the wings, which when the bird is at rest stretch to the middle of the tail, and the twelve tail feathers are glossy black. The upper row of covert feathers are exactly the same red color as the rest of the body as are the hind wings and the edges of the lower row of coverts of the pinions; however, a few of the hindmost are dirty white, one of them completely, the other only on one side. The coverts under the wings are this color too. The bird is comparable in size with a chaffinch or at most a bullfinch; its length from beak tip to the extremity of the tail is $5\frac{1}{2}$ English inches; the width from one wing tip to the other is $7\frac{2}{10}$ inches. Its food, going by the form of the beak, and probably like other exotic treecreepers, is honey manufactured in flowers. I can scarcely believe that it eats insects too, as do the two European species, the tree-creeper and the wallcreeper, which really in many respects vary from the other treecreepers and could, if necessary, be separated if one wanted to emphasize variations in the classification.

The habitat of this little creature is the island of Waihi, where one of the most famous men of this age, the navigator Cook, closed his glorious life in the most tragic way. The inhabitants of this and the neighboring islands finish their decorations and various pieces of clothing from the feathers of this bird, which must be extraordinarily numerous there, for those works are certainly not rare. Cloaks are the principal pieces bordered over and over with them; the women also wear necklaces of a thumb's thickness which consist completely of such feathers. Such necklaces are wound round the head up to sevenfold for ceremonial dances.

A German, Barthold Lohmann, who went on the last voyage, brought this rarity to me. He also presented a necklace to His Excellency's Cabinet of natural history here.

It has been mentioned earlier that George Humphrey, the natural history and ethnographic dealer and collector, purchased shells and ethnographic items from the third-voyage ships and that he may also have obtained some bird specimens from them. He certainly acquired some Hawaiian bird specimens at the Samwell sale in 1781. In 1782, at the instigation of Johann Blumenbach, Humphrey sold to the University of Göttingen a large ethnographic collection which ap-

parently arrived there via King George III, who was Elector of Hanover. (For some information relating to this transaction see Whitehead 1978:70-72, Kaeppler 1978). Two Hawaiian bird specimens were included in that sale. One of them was probably the specimen of *Moho nobilis* which, as we will see, was used by Merrem as the basis for his description of that species. This specimen no longer exists. The other was a specimen of *Vestiaria coccinea* which is now in the Institut für Völkerkunde der Universität, Göttingen. These bird specimens could only have been collected on Cook's third voyage. They were perhaps included in the Humphrey sale as examples of the birds from which had been obtained many of the feathers used in the manufacture of the "artificial curiosities" from the Hawaiian Islands.

We learn from Blasius Merrem (1784-1786:4) that an English natural history dealer named Dolmer, who passed through Göttingen in the summer of 1783, had an "excellent" collection of stuffed birds in his possession. A number of those birds were subsequently described and illustrated by Merrem (1784-1786:4, 6, 23, 39, and tables 1, 6, 9). Of particular interest for present purposes is that Dolmer then had in his possession two specimens of *Vestiaria coccinea* which must have been collected on Cook's third voyage. I do not know how they originally came into Dolmer's possession, but Merrem used them, together with a specimen among many artifacts in the Königlichen Naturalienkabinette at Göttingen (which was most probably the one included in the Humphrey purchase of 1782), as the basis of his description and illustration (1784-1786:16-18, table 4) of *Mellisuga coccinea*. This description was later published by Merrem in Latin (1786-1787:14, table 4). Merrem, who was aware of Forster's earlier description, described the species in detail and gave measurements from the specimens he examined.

In 1783, Franz Joseph Märter had published in Vienna (Märter 1783:76, table 2, folio 1, 2) a short description in both German and Latin of *Vestiaria coccinea* under the genera *Polytmus* of Brisson and *Trochilus* of

Linnaeus. This description was accompanied by an illustration (in black and white) of two specimens, an illustration which is of some importance historically for it is, as far as I am aware, the first published illustration of *Vestiaria coccinea*. Märter did not say where he saw his specimens. However, they must have been collected on Cook's third voyage. It seems just possible that his description and illustration were based on the same two specimens which had been in Dolmer's possession in Göttingen in the summer of 1783, which Merrem also saw and described. As a natural history dealer, Dolmer seems to have moved about a good deal. George Forster recorded meeting him (he calls him Dollmer) in Vienna in August 1784 (Leuschner 1973: 111–112, 118). It is of interest to record here that Forster thought Märter was incorrect in describing *Vestiaria coccinea* as a *Polytmus* or *Trochilus* (Leuschner 1973:97–98).

In 1782, Johann Friedrich Blumenbach (1782:190–191) had given a very short Latin description of *Vestiaria coccinea* which he no doubt based on Forster's original 1781 account. In 1797, he again published a short account of *Vestiaria coccinea* (Blumenbach 1797–1810: Part 2, 16), calling it *Certhia coccinea*. This account was accompanied by a colored illustration done from a stuffed specimen which Blumenbach said was then among the large collection of South Sea curiosities which His Majesty (George III) had presented to the "academische Museum." This was no doubt the third-voyage specimen which was included in the Göttingen Humphrey purchase of 1782 and which is still in the Institut für Völkerkunde der Universität, Göttingen.

It is obvious that more specimens of *Vestiaria coccinea* were taken back to England than of any other third-voyage Hawaiian bird species. Solander catalogue entry no. 35 indicates that Banks alone received 12 (Medway 1979:323). The remaining Banks specimens were later described under *Certhia* in ms lists 2 and 3, no. 51 (Dryander n.d.):

ms list 3:

rubra

C. rubra, rostro maxime incurvato et pedibus flavis, rectricibus remigibusque nigris, fascia alarum alba
Sandwich Islds. Sol. cat. 35 4.

Latham clearly saw several specimens of various ages (including no doubt those in the Banks collection), but he described (1781–1782:704, no. 5) his "Hook-billed red Creeper" from specimens then in the Leverian Museum and his own collection. His description follows:

LENGTH six inches. Bill three quarters of an inch long, and very hooked, though not so much as in the last species; the colour of it very pale: general colour of the plumage scarlet: wings and tail black: on the wing coverts next the body is a white spot, owing to two or three of the feathers having the outer webs of that colour: legs pale like the bill.

In some birds the forehead is of a buff-colour: and the parts about the head and neck have both a mixture of buff and dusky black, which are suspected to be the birds not yet arrived at their full plumage.

This beautiful species inhabits the *Sandwich Islands*, and is made great use of by the natives, in their feathered dresses; more of which will be said, when the account of the last expedition to those parts shall make its appearance.

Five years later, Latham wrote further of the species (1787:127, no. 5). By this time he recognized that the specimens with variegated plumage were young birds.

OUR people first met with these birds at the island of *Atooi*, though they are common in all the *Sandwich Islands*, where they are said to be gregarious, though not met with alive by any of our people. Those with a variegated plumage are young birds. The general name for them is *Eee-eve*, though they called them at *Atooi*, *Heoro-taire*.

Forty years after his original account, Latham (1822–1828, vol. 4:193, no. 51) gave a more detailed description of the species, which he then called the "Hook-billed red Honey-eater."

Gmelin (1788–1793, vol. 1(1):470, no. 29) based his *Certhia coccinea* on George Forster's name:

coccinea.

C. coccinea, alis caudaque nigris. Forster Goett. Magaz. 1. 6. p. 346. Blumenb. Naturg. ed. 2. p. 190. Hookbilled red Creeper. Lath. Syn. 1. 2. p. 704. n. 5. Carmosinrother Honigsauger. Merrem Beytr. 1. p. 16. t. 4.

Habitat in insulis Sandwich, ab incolis similiter ad vestimenta plumosa adhibita, longitudine vix 6 pollices adaequans; magnitudine passeris.

Rostrum capite longius, acinacis modo curvatum, albidum; pedes cum unguibus longis albicantes; rectrices breves, acuminatae; alarum margo et pennarum gularium radix alba.

Two years later Latham, although referring to *Certhia coccinea* of Forster and Gmelin, described (1790, vol. 1:282, no. 5) the species as *Certhia vestiaria*.

A Leverian Museum specimen of *Vestiaria coccinea* (one of Latham's types) was drawn by Sydenham Edwards, whose illustration was published by Audebert and Vieillot (1802, vol. 2:109–110, pl. 52) together with a description of the species under the name L'Heoro-taire. Sarah Stone also drew the Leverian Museum specimens. One of her illustrations has been reproduced by Force and Force (1968:49). Another two original watercolor drawings of the species by her (one of them virtually identical to the preceding) are in the Dixon Library, Sydney (Q77/37, opposite pp. 117, 118).

At least two specimens of *Vestiaria coccinea* were included in the sale of the Leverian Museum in 1806. The first such specimens were sold on the 26th day (June 3, 1806).

3070 *Certhia vestiaria*, very rare, m. and fem. Sandwich Islands. (Donovan 1806:131.)

Annotated copies of the catalogue inform us that these specimens were sold for £1 17s 0 and the catalogue at Southwark gives Latham as the purchaser. The specimen(s) Latham had in 1782, when he described the species, he may have disposed of when he left Kent in 1796 (Mathews 1931). I do know why he should purchase the specimens in question, which were types of his "Hook-billed red Creeper." Their fate is unknown.

A third specimen may have been included in the Leverian sale. Lot 33 on the last day of the sale (July 14, 1806) was:

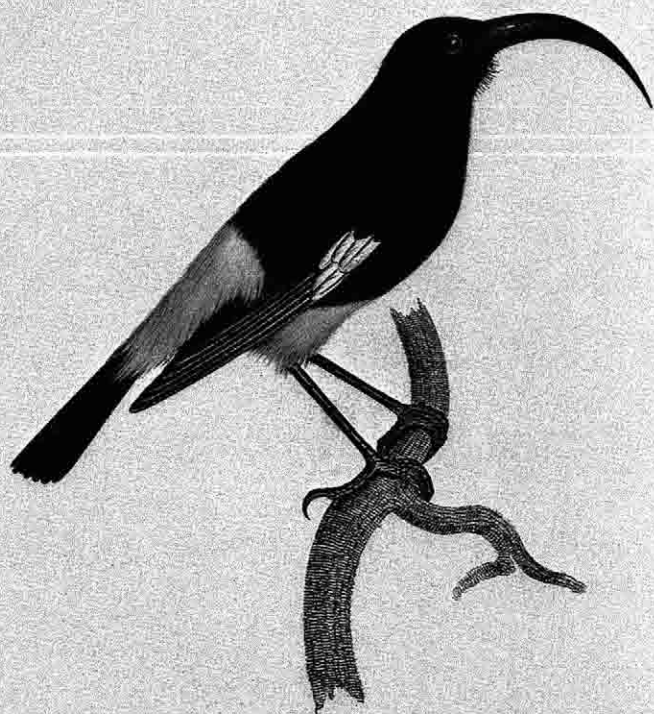
33 Red certhia, Sandwich Islands, *Certhia vestiaria* (Donovan 1806, last day, 13).

However, the Middleton copy of the sale catalogue has this lot crossed out with the note "sold before." I do not know what became of it.

One of the four third-voyage specimens of *Vestiaria coccinea* which Banks still possessed at the time of compilation of the mss lists is most probably that which is now in the British Museum (Natural History) (Burton 1969). However, we should not overlook the remote possibility that Banks had received this specimen from the Portlock–Dixon voyage when, as we will see, many *Vestiaria coccinea* were purchased. As has been pointed out earlier, the specimen now in the Museo ed Istituto di Zoologia Sistemica, Università di Torino, which was acquired at Bullock's sale, cannot be related to Cook's third voyage and there is no evidence that Bullock obtained it directly or indirectly from Banks. The third-voyage specimen in the Institut für Völkerkunde der Universität, Göttingen, which was purchased from Humphrey in 1782, had probably been acquired by Humphrey direct from the third-voyage ships or at Samwell's sale in 1781.

Shaw and Nodder (1790–1813: vol. 3, pl. 75) published an illustration of *Vestiaria coccinea* but they made no mention of the whereabouts of the specimen on which it was based. On 14 October 1793 (Sweet 1963:106), Robert Jameson saw a "Red Certhis of which the S. Sea islanders make their dresses" at Thompson's shop in Little St. Martins Lane. This may well have been a specimen of *Vestiaria coccinea* and both it and Shaw's bird may have been collected on Cook's third voyage. They may, however, equally have come from that of Portlock and Dixon.

There are two mounted specimens of *Vestiaria coccinea* in the Paykull collection in the Naturhistoriska riksmuseet in Stockholm which could be mentioned here for, although they cannot be related to Cook's voyage and may well not have come from there, they are old specimens and a brief account of their history may be of some interest. The two specimens in question went to that museum in 1829 along with a large collection of natural history items received from Gustav von Paykull. They are entered as *Drepanis vestiaria* in a catalogue later compiled by Carl J. Sundevall in which they have the numbers 585 and 586. In a catalogue of the Paykull collection dated 1822, these specimens are shown as *Certhia vestiaria* and variety. Pay-



Le hoho. Pl. 63.

FIGURE 1. Mamo, *Drepanis pacifica* (Gmelin, 1788). Audebert and Vieillot 1802, vol. 2, p1. 63. Courtesy of British Museum (Natural History).

kull had quite probably obtained them on the disposal of the private museum of Johan Gustaf von Carlson after the latter's death in 1801. Carlson's collection was significant, inter alia, because it contained several of Anders Sparmann's bird types from Cook's second voyage. *Certhia vestitaria* appears in a catalogue of the Carlson collection compiled in 1802 and this entry may have represented more than one specimen. I do not know where Carlson got them from.

It may also be mentioned that there are several interesting mounted specimens of Hawaiian birds on display in the Naturhistoriska riksmuseet, mostly collected by Palmer and Perkins. Among them are specimens of *Vestiaria coccinea* (8244) collected by Warnegren in Hawaii in 1845; *Moho bishopi* (16661) collected by Palmer on Molokai 7 January 1893; *Moho braccatus* (16662), ex Rothschild, collected on Kauai on 12 April 1891; and *Moho nobilis* (16663) ex Rothschild.

Vestiaria coccinea was obviously plentiful on Kauai at the time of Cook's visit in 1778, judging by the numbers which were available for purchase at Waimea. Presumably it was also common on Hawaii in 1779. Evidence of its early abundance is provided by the large number of birds which must have been taken for Hawaiian featherwork. The species is still fairly common on Kauai, Maui, and Hawaii, where, in general, it is found at elevations above 2800 feet (Berger 1972:182).

mamo *Drepanis pacifica* (Gmelin, 1788)

Figure 1

Banks received two specimens from the third voyage which are referred to in Solander catalogue entry no. 39 (Medway 1979:323). One of these specimens was briefly described under *Certhia* in ms lists 2 and 3, no. 55a, as follows (Dryander n.d.):

ms list 2:

nigra, humeris, uropygio, crisso femoribusque flavis,
rostrum longissimo, incurvato 1
Sandwich Isles

ms list 3:

festivus.
C. nigra, humeris, uropygio, crisso femoribusque
flavis, rostrum longissimo, incurvato 1
Sandwich Islds. Sol. cat. 39.

Latham described (1781–1782:703, no. 3) his "Great Hook-billed Creeper" from specimens then in the Leverian Museum but he gave an incorrect locality:

LENGTH eight inches. Bill an inch and three quarters, stout at the base, and very much hooked; colour of it brown, with a pale base: the upper parts of the body are black, except the lower part of the back, the rump, and upper tail coverts, which are of a fine deep yellow: the under parts of the body dusky: the shoulders, inner ridge of the wing, and part of the inner wing coverts, are of the same yellow: the bastard wing yellowish white at the end: the under wing coverts snow white: the sides of the vent, the vent itself, and the thighs, are yellow: the tail and quills black: the legs black brown. Inhabits the *Friendly Isles*, in the *South Seas*.

He later said (1787:126) that the species was "common at Owhyhee, and called by the natives Hoohoo," the last information having been obtained by him from the official account of the voyage where the Hawaiian name for *Moho nobilis* is wrongly attributed to this species. In 1822 (1821–1828, vol. 4: 191, no. 48) he repeated the errors relating to locality and native name by stating that his (then) "Great Hook-billed Honeyeater" "inhabits the Friendly Islands, in the South Seas; called, at Owhyhee, Hoohoo."

Gmelin, because he based his description (1788–1793, vol. 1(1):470, no. 27) of *Certhia pacifica* on Latham's 1782 description, gave the species the wrong habitat:

pacifica.

C. nigra, subtus obscura, humeris, dorso inferiore, uropygio crissoque flavis, tectricibus alarum inferioribus niveis. Great hook-billed Creeper. *Lath. Syn.* 1. 2, p. 703, n. 3.

Habitat in insulis amicis maris australis, 8 pollices longa; rostrum valde curvatum fuscum, basi pallidius; tectrices caudae superiores et nonnullae alarum inferiores flavae; alae spuriae ochroleucae; pedes ex atro fuscis.

Two years later Latham also described it (1790, vol. 1:281, no. 3) under the name *Certhia pacifica*, but on this occasion he gave the correct habitat.

One of the Leverian Museum specimens on which Latham based his original description was drawn by Sydenham Edwards, whose illustration was reproduced by Audebert and Vieillot (1802, vol. 2:124, pl. 63). This is the first published illustration of the species and

is of particular importance since it is undoubtedly of one of Latham's type specimens.

Two specimens are known to have been in the Leverian Museum at the time of its dispersal. Both were sold on the 24th day (31 May 1806):

- 2790 Great hook-billed Creeper, *Certhia pacifica*, m. and fem. Sandwich Island, very rare (Donovan 1806:119).

Extant annotated copies of the sale catalogue confirm that these two specimens were purchased by John Latham for £1 2s 0. However, two specimens obtained by Fichtel at the Leverian sale are entered in the old catalogue at the Naturhistorisches Museum in Vienna as:

- 1806 III. 45 *Certhia pacifica* (112) m. 1
a ——— (113) 2 Guineas f. 1

Only two specimens are known to have been in the Leverian Museum and it seems that Fichtel purchased his birds from Latham for an increased price. This is not so surprising, for we know from a perusal of the various annotated catalogues that a number of Leverian specimens were resold by their original purchasers, including Latham.

Pelzeln (1872:26, 1873:21) referred to these two specimens, considering them to be types of Latham's description and one of them also the original of the plate of Audebert and Vieillot. He thought it probable that the specimens were from Cook's voyage. Pelzeln and Lorenz (1886-1888: vol. 1, 263) later identified them as types. Rothschild noted (1893-1900:160, 1907:31-32) that Latham's types were in Vienna, remarking that one of them was perfect, the other lacking the upper portion of the bill. Only one of them, the male specimen, was still in the Naturhistorisches Museum when Sassi (1939:408) wrote of it, and it is still there as no. 50735. Sassi indicated that the female specimen had been sold to the American Museum of Natural History in October 1922. However, a recent (1977) enquiry of that museum does not disclose that it ever possessed this specimen. I do not know what became of it.

We have already seen that there is no evidence which links the Leiden specimen from Bullock's sale with Cook's third voyage. We do not know the origin of the specimen which Levaillant (1806:45, pl. 19) figured as *Mérops jaunoir*, erroneously stating that it inhabited New Holland.

I do not know where Latham obtained his information (1787:126) that *Drepanis pacifica* was common at Owhyhee. Apparently endemic to the island of Hawaii, the species appears never to have been plentiful in European times, although Munro (1944:91) did recall that it was not an extremely rare bird up to the 1880s. The last specimen known to have been collected was taken inland of Hilo by Palmer's assistant on 16 April 1892 (Rothschild 1893-1900:161). The last birds seen were a small group observed by Henshaw above Kaumana in 1898 (Henshaw 1902:51). He believed the species to be extinct, or so nearly so by 1902 that there was "little hope that it will ever again be seen by human eyes."

Hawaii 'akialoa *Hemignathus obscurus obscurus* (Gmelin, 1788)

Figure 2

Sir Joseph Banks received three specimens of this bird on the return of the third-voyage ships. They are referred to in Solander catalogue entry no. 38 (Medway 1979:323) and were later described under *Certhia* in ms lists 2 and 3, no. 53 (Dryander n.d.) as follows:

ms list 2:

rostrata C. fusco-virens subtus dilutior, rostro longissimo incurvato, mandibulo inferiori breviori
Sandwich Islds. Sol. cat. 38 2

ms list 3:

rostrata C. fusco-virens subtus dilutior, rostro longissimo et valde incurvato, mandibula inferiori breviori
Sandwich Islds. Sol. cat. 38 3

Latham described and illustrated (1781-1782:703-704, no. 4, pl. 33, fig. 1) this species as the "Hook-billed green Creeper" from specimens then in his own collection and that of the Leverian Museum. His description is as follows:

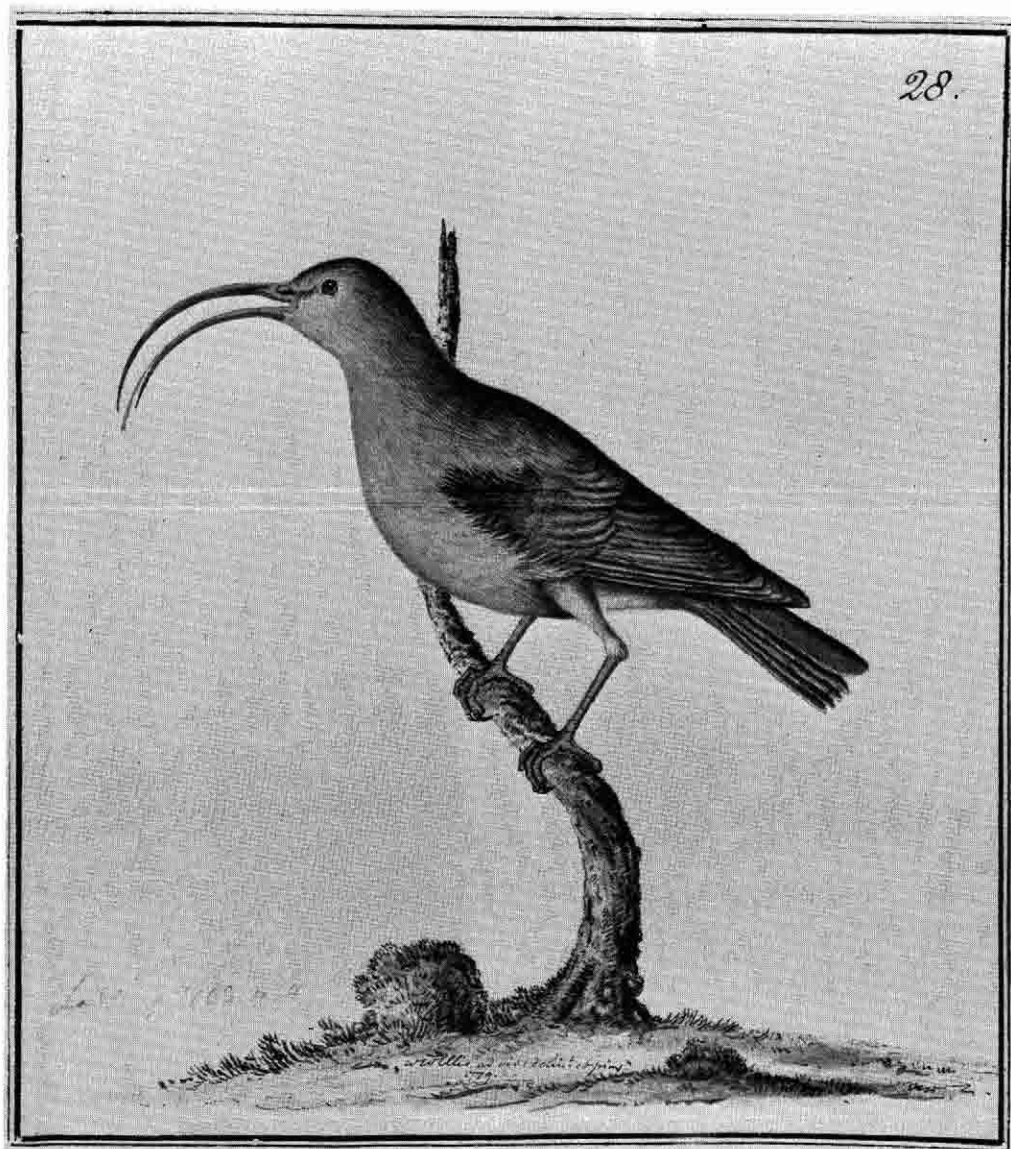


FIGURE 2. Hawaii 'akialoa, *Hemignathus obscurus obscurus* (Gmelin, 1788). Watercolor by William Ellis, folio 28. Courtesy of British Museum (Natural History).

LENGTH seven inches. Bill an inch and three quarters long, and bent quite in the shape of a semicircle; the under mandible shortest by a quarter of an inch; colour of both brownish black: the nostrils covered with a membrane: between the bill and eye is a streak of brown: the plumage in general is olive green, palest beneath, and somewhat inclined to yellow: quills and tail dusky; the last even at the end, and edged with yellow green: legs dusky brown; the feathers just above the knee, or garter,

white: the hind toe pretty long.

Inhabits the *Sandwich Islands* in general, and is one of the birds whose plumage the natives make use of in constructing their *feathered garments*; which, having these olive-green feathers intermixed with the beautiful scarlet and yellow ones belonging to the next species, and *yellow-tufted Bee-eater*, make some of the most beautiful coverings of these islanders.

Latham's published illustration has been reproduced by Kaeppler (1978:7, fig. 7) but his original drawing seems no longer to survive. Rothschild was not very complimentary when he said (1893-1900:91) of Latham's description and drawing: "Although the bird is very poorly described, and even wrongly in some respects, the description might be called recognizable, but the figure is abominable."

Latham (1787:126) later considered, on the basis of Cook and King (1784, vol. 3:119), that his "Hook-billed green Creeper" was "most probably the bird that is called at *Owhyhee, Akaiearooa*."

Gmelin's description (1788-1793, vol. 1(1):470, no. 28) of *Certhia obscura* was based on Latham's "Hook-billed green Creeper":

obscura.

C. olivacea, remigibus caudaque aequali viridi-marginata obscuris.

Hookbilled green Creeper. Latham Syn. 1. 2. p. 703. n. 4. t. 33. f. 1.

Habitat in insulis Sandwich, ab incolis ad vestimenta eorum plumosa adhibita, 7 pollices longa.

Rostrum ex fusco atrum, semicirculi ad instar curvatum; nares membrana tectae; inter oculos naresque stria fusca; abdominis color in flavum paulisper vergens; pedes obscuri fusci, genubus albis; digitus posterioris unguis praelongus.

Shortly afterward, Latham also described it (1790, vol. 1:281-282, no. 4) under the name *Certhia obscura*. He described and illustrated the species again in his *General History of Birds* (1821-1828, vol. 4:192, pl. 71, fig. 1) but this time under the name "Hook-billed green Honey-eater." This description is almost identical to the one he had given in 1782.

As far as can be ascertained, there was only one specimen of *Hemignathus obscurus obscurus* in the Leverian Museum. It was drawn by Sarah Stone in about 1783 and one of her illustrations has been reproduced by Force and Force (1968:51), where however it is incorrectly identified as *Hemignathus procerus* Cabanis, 1889, from Kauai. Another original watercolor by Stone, virtually identical to the preceding, is in the Dixon Library, Sydney (Q77/37, opposite p. 119). The same Leverian Museum specimen was the subject of a drawing by Sydenham

Edwards which was reproduced by Audebert and Vieillot (1802, vol. 2:111-112, pl. 53). The identity of the Edwards drawing with *Hemignathus obscurus* has been recognized by subsequent writers (Latham 1822:192, Newton 1891:42, Rothschild 1893-1900:91, Sharpe 1885:4, Wilson and Evans 1890-1899:68).

I do not know what became of Latham's specimen. However, the Leverian Museum specimen was sold on the 40th day (20 June 1806) of the sale of that collection, the relevant sale catalogue entry reading (Donovan 1806:220):

4750 Hook-billed creeper, *Certhia obscura*, very rare.

Extant annotated copies of the sale catalogue confirm that it was sold for £1 2s 0. Two copies indicate that it was purchased by Lord Stanley and two indicate Thompson, who we know purchased for Stanley at the sale. The British Museum (Natural History) copy has the added manuscript note "light Green."

The specimen is referred to in the Earl of Derby's ms lists (List 1, no. 91; List 2, no. 1129) among the birds he purchased from the Leverian Museum. It passed with his collections to the City of Liverpool in 1851. Many years ago Alfred Newton examined the specimen, which he clearly regarded as the type (1891:42) and was able to identify it "beyond the least doubt" as the very specimen drawn by Sydenham Edwards and reproduced by Audebert and Vieillot. Subsequent writers (Rothschild 1893-1900:91, Sharpe 1906:202, Whitehead 1969:195, Wilson and Evans 1890-1899:68) have all recognized that the Leverian Museum specimen was in Liverpool. It is still there in the Merseyside County Museums, as Derby no. 1129. It is clearly a syntype of Latham's "Hook-billed green Creeper" and Gmelin's *Certhia obscura*. In these circumstances it is surprising that the specimen is not included in the recent list of type specimens of birds in the Merseyside County Museums (Wagstaffe 1978).

The Liverpool specimen of *Hemignathus obscurus obscurus* is the only one of those

collected on Cook's third voyage which is known still to survive. Lysaght was not correct when she said (1959:327) that a specimen of *Hemignathus obscurus* was bought by Temminck at the final disposal of the Leverian Museum. (This mistake seems to have been followed by Whitehead 1969: 195.) Temminck, as we have seen, obtained his specimen at the sale of Bullock's Museum (Lot 101, 17th day) and there is no evidence that it was collected on Cook's third voyage. Stresemann too was not correct when he stated (1950:79) that one of Latham's types was sold at the Bullock auction in 1819 to Lord Stanley. The specimen in question was acquired, as we have just seen, at the Leverian sale in 1806.

The Hawaii 'akialoa was probably common in the type locality at the time of Cook's visit in 1779. Palmer (Rothschild 1893-1900: 93) found them common in the district of Kona at altitudes of about 2000-6000 ft. Munro (1944: 113) recalled that in 1891 it was well distributed over the Hawaii forests and common in Kona. Perkins (1903:422) said that it was common in Kona in 1892 and 1894, not only in the denser forest but also in the open parts at all elevations. Unfortunately it has not been definitely seen since early in the present century and may now be extinct (Berger 1972:141, Hawaii Audubon Society 1975:72).

'apapane *Himatione sanguinea sanguinea* (Gmelin, 1788)

Solander catalogue entry no. 36 (Medway 1979:323) confirms that Banks received six third-voyage specimens of this bird. Those which Banks still possessed were later described under *Certhia* in ms lists 2 and 3, no. 52 as follows (Dryander n.d.):

ms list 2:

Cardinalis Certhia coccinea ventre inferiori albo
remigibus rectricibusque fuscis rostro breviori pedi-
busque nigris. 1
Sandwich Islds. Sol. cat 36.

ms list 3:

Cardinalis C. coccinea, ventre inferiori albo, cauda et
alis fuscis, rostro breviori pedibusque nigris 2
Sandwich Islds. Sol. cat 36.

Latham (1781-1782:739, no. 43) described his "Crimson Creeper" from specimens then in his own collection and that of the Leverian Museum. This description is as follows:

LENGTH five inches. Bill dusky, not very hooked, though bent; three quarters of an inch long: the body in general crimson, the upper parts deepest: quills black: the secondaries margined with chestnut: belly dusky: vent white: the tail black: all the feathers rather pointed at the end; the shafts white: legs black.
Inhabits the *Sandwich Islands*.

Latham later published an almost identical description, but under the name "Crimson Honey-eater" (1821-1828, vol. 4:200, no. 60), in his *General History of Birds*.

Latham's "Crimson Creeper" was the basis for Gmelin's description (1788-1793, vol. 1(1): 479, no. 44) of *Certhia sanguinea*:

sanguinea.

C. sanguinea, remigibus caudaque nigris, abdomine obscuro, crisso albo.
Crimson Creeper. *Lath. Syn. I. 2. p. 739. n. 43.*
Habitat in insulis Sandwich, 5 pollices longa. Rostrum obscurum; remigum secundariorum margo badius; rectrices acuminatae, scapis albis; pedes nigri.

Latham (1790, vol. 1:290, no. 30) also described it under the name *Certhia sanguinea*.

Latham did not publish an illustration of the species. Kaeppler (1978:5, fig. 7) was not correct when she identified Latham's plate 33, figure 2, as being of this species. Latham himself said that this illustration was of his "Cardinal Creeper" and he referred (1781-1782:733, no. 35) to the illustration when describing that species (which he said inhabited Tanna) from a specimen or specimens then in the Leverian Museum. Latham's description and illustration were of the Cardinal Honey-eater *Myzomela cardinalis cardinalis* (Gmelin, 1788). The illustration published by Audebert and Vieillot (1802, vol. 2:128, pl. 66) was of an individual in the collection of George Humphrey, the London collector and dealer.

The fate of Latham's type specimens is not known. I have been unable to locate the Leverian Museum specimens in the catalogue of the sale of that collection (Donovan 1806).

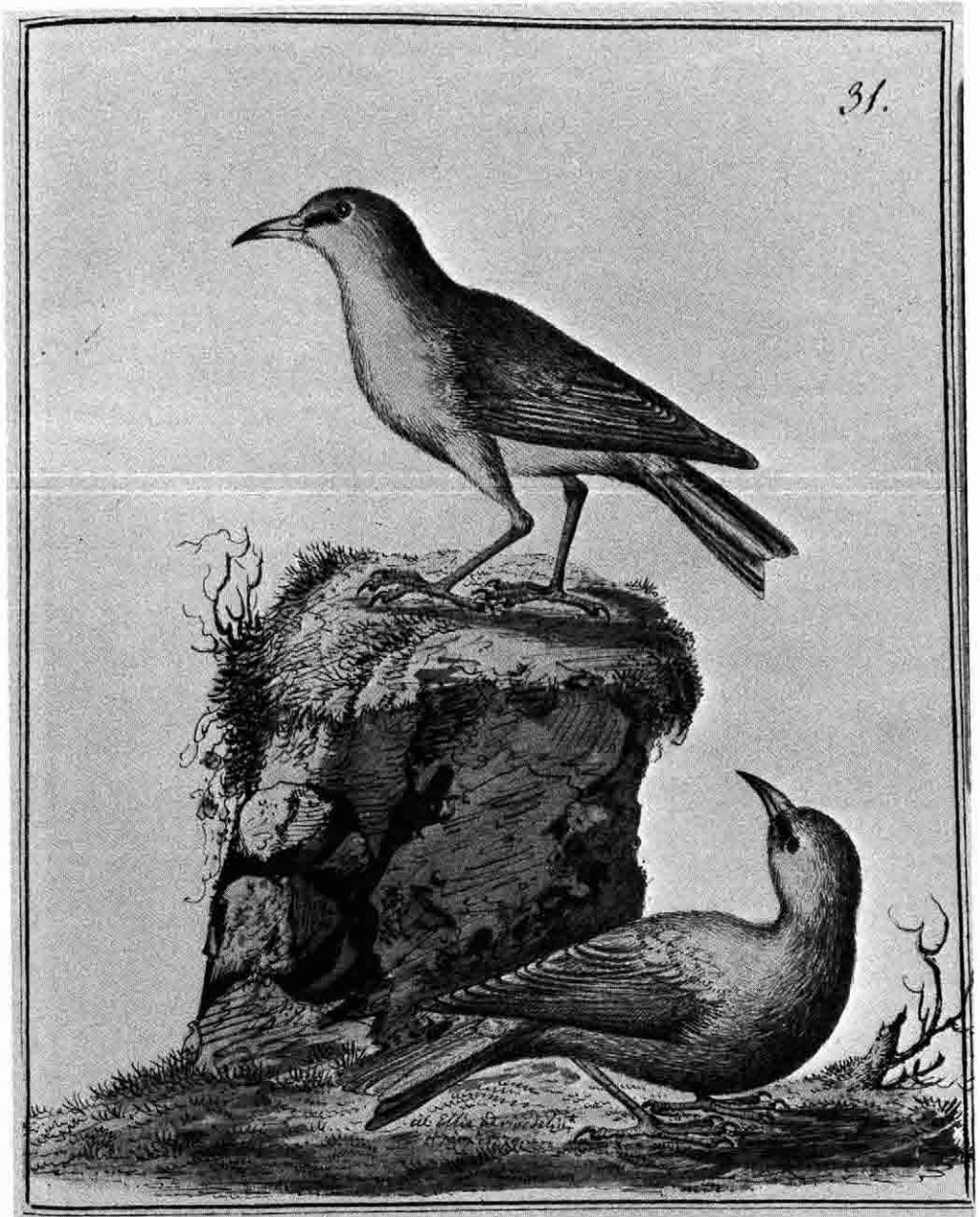


FIGURE 3. Hawaii 'amakihi, *Loxops virens virens* (Gmelin, 1788). Watercolor by William Ellis, folio 31. Courtesy of British Museum (Natural History).

The 'apapane is the most common of the surviving species of honeycreepers. Clerke (Beaglehole 1967:603) tells us that it was very common in 1779 when the ships were at Kealakekua Bay, where it was observed around flowering coconut palms.

Hawaii 'amakihi *Loxops virens virens* (Gmelin, 1788)

Figure 3

A number of specimens of this bird were taken back to England on the third-voyage

ships. Banks received seven, which are referred to in Solander catalogue entry no. 37 (Medway 1979:323). Those specimens which then remained were briefly described under *Certhia* in ms lists 2 and 3, no. 54 (Dryander n.d.)

virens

C. virens sub²tus flaviscens, rostro breviori et pedibus fuscis
Sandwich Islds. Sol. cat. 37.

Latham (1781–1782:740, no. 44) described his “Olive-green Creeper” from a specimen then in the Leverian Museum. He commented that his bird was by some supposed to be the female of his “Crimson Creeper” *Himatione sanguinea*. Forty years later he described it (1821–1828, vol. 4:200, no. 60A) as the supposed female of *Himatione sanguinea*, an error which was repeated by Gray (1859:8). Latham’s 1782 description is as follows:

LENGTH five inches. Bill very little curved, and of a dusky colour; pale at the base: between the bill and eye dusky: plumage olive green, palest beneath: quills and tail the same, but more dusky; both edged with yellow: legs dusky.

Inhabits the *Sandwich Islands*. This is by some supposed to be the female of the last; which is by no means unlikely, as several birds, of which the male is red, the females are green.

Gmelin’s description (1788–1793, vol. 1(1): 479, no. 45) of *Certhia virens* was based on Latham’s “Olive-green Creeper”:

virens.

C. olivacea, remigum rectricumque margine flavo. Olive-green Creeper. *Lath. Syn.* 1. 2. p. 740. n. 45. *Habitat in insulis Sandwich, 5 pollices longa; an femina sanguineae?*

Rostrum pedesque obscuri.

Latham (1790, vol. 1:290, no. 31) also described the species as *Certhia virens*.

Audebert and Vieillot (1802, vol. 2:129–130, pls. 67, 68) described and illustrated two birds under the name “L’Héoro-taire vert-olive,” male and female, and referred to Latham’s “Olive-green Creeper.” Gray (1859:8), Sharpe (1885:9), and Rothschild (1893–1900:133) referred both plates to *Loxops virens*, while Latham earlier (1821–1828, vol. 4:200) had referred plate 67 to his

“Olivegreen Creeper,” However, Wilson and Evans (1890–1899:29) considered that the specimens figured by Audebert and Vieillot must be referred to *Loxops virens* with some hesitation. They thought plate 67 to be “a very bad figure, questionable whether it refers to this species; also whether the ‘femelle’ described and figured ... is of the same species; but the latter is most like *H. virens*.”

It was no doubt the Leverian Museum specimen Latham described which was sold on 17 July 1806:

487 The orange-faced parroquet, *Louisiana*; and the green certhia, rare, from *Sandwich Isles* (Donovan 1806, appendix, 28).

The annotated copy of the sale catalogue in Cambridge indicates that this lot was bought by Brogden for 18s, but I do not know what subsequently became of the *Sandwich Isles* specimen.

Perkins (1893:105) said that this bird was abundant in Kona. Henshaw (1902:43) noted that it was one of the commonest of the island species. It is still one of the most common native birds (Berger 1972:124, Hawaii Audubon Society 1975:66).

Hawaii ‘akepa *Loxops coccinea coccinea* (Gmelin, 1789)

Figure 4

Banks received one male specimen of this bird from the third voyage. It is referred to in Solander catalogue entry no. 139 (Medway 1979:336) and described in ms list 3, no. 166 under *Fringilla* as follows (Dryander n.d.):

aurantia. luteo rufescens. alis cauda pedibusque fuscis
rostrum albidum
Sol cat 139. *Sandwich Isles*

Latham described (1783:270, no. 28) his “Scarlet Finch” from a male specimen then in the Leverian Museum. His description is as follows:

LENGTH four inches and a half. Bill like that of a Goldfinch, but longer, and very sharp at the point: colour pale brown: general colour of the plumage a brilliant deep orange, verging to scarlet: wings and tail dusky; the outer edges of the quills fringed with orange,



FIGURE 4. Hawaii 'akepa, *Loxops coccinea coccinea* (Gmelin, 1789). Watercolor by William Ellis, folio 85. Courtesy of British Museum (Natural History).

and the ends of the prime ones black: the tail even at the end: legs black.

Inhabits *Sandwich Islands*.

A virtually identical description appeared in his *General History of Birds* (1821–1828, vol. 6:68–69, no. 26).

Gmelin based his description (1788–1793, vol. 1(2):921, no. 80) of *Fringilla coccinea* on Latham's "Scarlet Finch":

coccinea.

Fr. ex coccineo aurantia, alis caudaque aequali atris, remigum margine exteriori aurantio, primorumque apice nigro.

Scarlet Finch. *Lath. Syn. II. 1. p. 270. n. 28. Habitat in insulis Sandwich, 4½ pollices longa. Rostrum fuscescens; pedes nigri.*

In the following year Latham also described it (1790, vol. 1:444, no. 32) as *Fringilla coccinea*.

In 1805 Vieillot published a description and drawing of the male of this species which he called "Le Chardonneret écarlate" (Vieillot 1805:55, pl. 31). He said that the female was unknown. His description is obviously based on Latham's 1783 description of the "Scarlet Finch." It is possible that his illustration was based on a drawing by Sydenham Edwards of the Leverian Museum specimen, for we know that Vieillot had earlier published various drawings by Edwards of specimens in that museum. I do not know what became of the Leverian Museum specimen. I have been unable to locate it in the catalogue of the sale of that collection (Donovan 1806).

The 'akepa is now rare on Hawaii (Berger 1972:139, Hawaii Audubon Society 1975:69). Perkins (1903:417) recorded that it was "very widely distributed on that island, and in parts of the Kona district . . . is abundant." However Wilson (Wilson and Evans 1890–1899:50) was able to obtain only five specimens during eight months of collecting on Hawaii in the late 1880s. Munro (1944:109) found it common in all the forests of Hawaii. Palmer (Rothschild 1893–1900:170) found it to be comparatively numerous in Kona.

'o'u *Psittirostra psittacea* (Gmelin, 1789)

Sir Joseph Banks received five third-voyage specimens of this bird. They are referred to in Solander catalogue entry no. 130 (Medway 1979:335) and were later described in ms list 3 under *Loxia* as follows:

157. *Psittacea L. virens subtus dilutior capite flavissimo. 4.*

Sol. cat 130. Sandwich Islds.

Latham based his description and illustration (1783:108–109, no. 3, pl. 42) of the "Parrot-billed Grosbeak" on male and female specimens then in his own collection and that of the Leverian Museum. His description is as follows:

SIZE of the Hedge Sparrow: length seven inches. The bill fashioned much like that of a Parrot, the upper mandible being elongated and curved at the point, the under one short; colour of the bill pale, with a dusky tip: the head and part of the neck in the male are yellow: the rest of the plumage a greenish olive brown, palest beneath: the edges of the quills and tail yellowish; the last even at the ends: legs pale brown.

The plumage in the *female* is not unlike that of the male, except the head, which is the same as the other parts of the body, with a mixture of yellowish grey about the sides of the head.

Inhabits the *Sandwich Islands*.

Latham's original drawing is still extant (Latham n.d., folio 504). He published it again, together with the above description (with minor alterations), in his *General History of Birds* (Latham 1821–1828, vol. 5:210–211, no. 4, pl. 87).

Latham's 1783 description of the "Parrot-billed Grosbeak" was used by Gmelin (1788–1793, vol. 1(2):844, no. 50) as the basis of his *Loxia psittacea*:

psittacea.

L. olivacea, remigum rectricumque aequalium margine flavicante, mandibula inferiore multo brevior.

Parrot-billed Grosbeak. *Lath. Syn. II. i. p. 108. n. 3. t. 42.*

Habitat in insulis Sandwich, 7 pollices longa. Rostrum pedesque fusciscentes; mari caput collumque flava.

A year later Latham also described it (1790, vol. 1:371, no. 3) under the name *Loxia psittacea*.

I do not know what became of the spec-

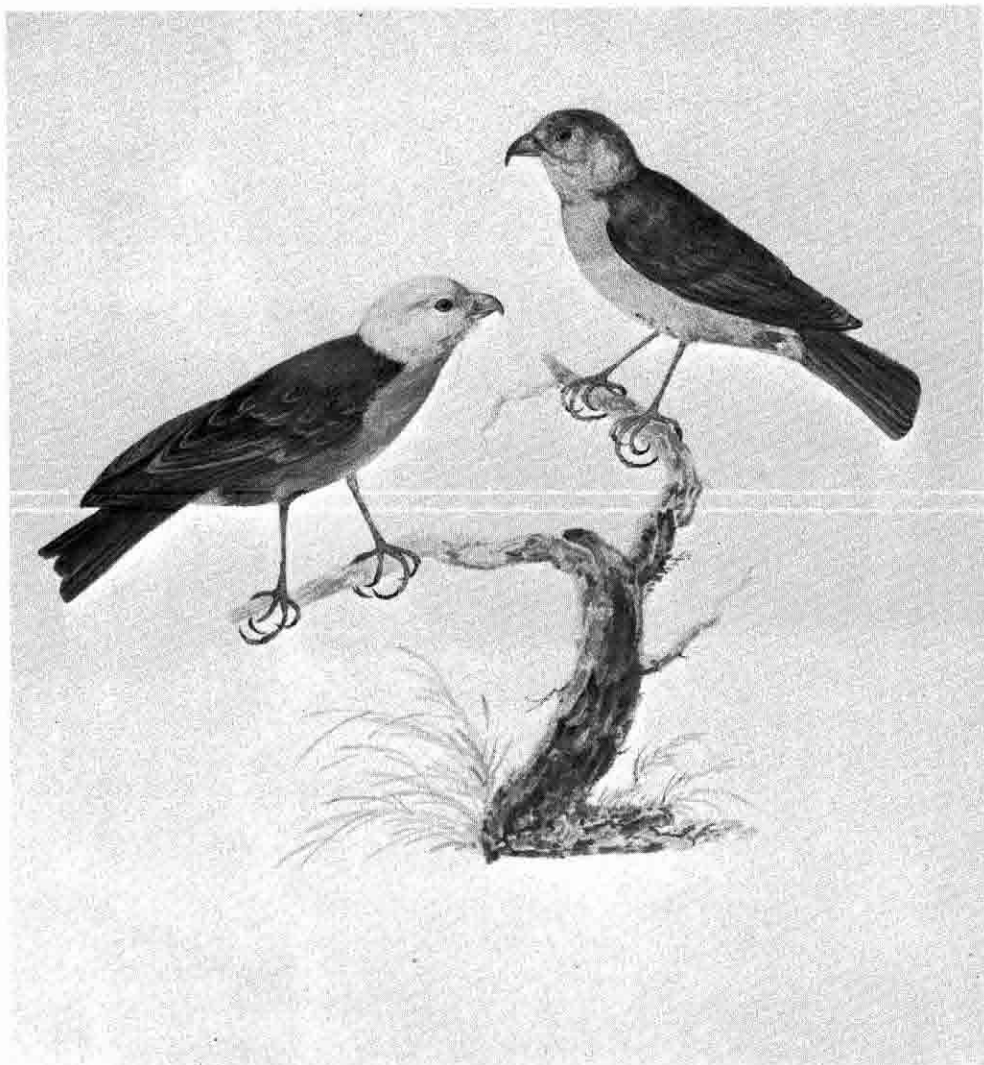


FIGURE 5. 'o'u, *Psittirostra psittacea* (Gmelin, 1789). Drawing by Sarah Stone based on specimens in the Leverian Museum. Courtesy of Dixon Library, Sydney, Q77/37.

imen or specimens which Latham possessed in 1783. However, there were three specimens in the Leverian Museum at the time of its dispersal in 1806. Temminck (Temminck and Laugier 1828, pl. 457) recalled seeing a pair in that collection probably when he inspected it during a visit to London in late 1800 or very early 1801 (Stresemann 1953a:326). Such a pair was drawn by Sarah Stone, whose original watercolor is in the Dixon Library, Sydney (Q77/37, opposite p. 121). One of the

Leverian Museum specimens (a male) was sold on the 36th day of the sale of that collection (June 16, 1806), the relevant sale catalogue entry reading (Donovan 1806:199):

4270 Parrot-billed grosbeak, *Loxia Psittacea*—very rare

Extant annotated copies of the catalogue confirm that this specimen was sold to Fichtel of Vienna for £1 12s 0. It was entered in the

old catalogue at the Naturhistorisches Museum as:

1806 III. 14. *Loxia psittacea* (79)

1

Pelzeln (1872:30, 1873:22) considered this specimen to be the original of Latham's illustration of the male and the type of his description. Pelzeln and Lorenz (1886:263) also recognized it as a type. The specimen is still in the Naturhistorisches Museum, with the present registration no. 50732.

Another two Leverian specimens (a male and a female) were sold on the 46th day of the sale (27 June 1806) to Thompson for Lord Stanley for £112s0, the relevant sale catalogue entry reading (Donovan 1806:247):

5488 *Loxia psittacea*, m. and fem.
Sandwich Island—rare

The British Museum (Natural History) copy of the catalogue has the added manuscript note "Parrot billd, size & shape of Sparrow."

Both specimens are referred to in the Earl of Derby's manuscript lists (list 1, no. 98; list 2, nos. 1132, 1133). Wilson and Evans noted (1890–1899:86) that they were then in Liverpool and both are still in the Merseyside County Museums, Derby nos. 1829 and 1829a. They are included in the recent list of type specimens of birds in that museum (Wagstaffe 1978:23–24), where I am incorrectly quoted as saying there is some doubt that they are Cook material. I have never had only doubt that these two specimens, and the one in Vienna, are from Cook's third voyage and that they are syntypes of Latham's "Parrot-billed Grosbeak" and Gmelin's *Loxia psittacea* (Medway 1979:342–343).

Clerke recorded this species as being very common while the ships were at Kealakekua Bay in 1779. Munro (1944:123) recalled that in the 1890s the 'o'u was extremely common on all the forested islands except Oahu, from which it had nearly disappeared. Perkins (1903:433), writing about middle Kona in 1892, said that the 'o'u was in "countless numbers throughout the wet belt." The

species is now at best very rare on Hawaii (Berger 1972:149, Hawaii Audubon Society 1975:76).

Hawaii 'o'o *Moho nobilis* (Merrem, 1786)

Figure 6

Blasius Merrem described and illustrated (1784–1786:8–11, table 2) his *edle Atzel* ('noble magpie') from a specimen which he said had been presented by the King of Great Britain to the Göttingen Museum along with a collection of artifacts. It seems that this specimen must have been included in the Humphrey sale of 1782. In 1786, Merrem's description was republished in Latin (Merrem 1786–1787:7, table 2) and he then gave to the species the name *Gracula nobilis*. I have not seen Merrem's later work and reproduce here his 1784 description in German, together with an English translation by Michael E. Hoare.

Die edle Atzel ist demjenigen Vogel, welchen Herr PALLAS die *langschnäbliche Atzel* (*Gracula longirostra*) nennt, so nahe verwandt, in ihrer ganzen Bildung, in den Verhältnissen ihrer Theile, und alien äussern Kennzeichen so ähnlich, dass man keinen Augenblick Bedenken tragen kann, beyde für Vögel einerley Gattung zu halten. Zwar unterscheidet sich die *langschnäbliche Atzel* durch einige Borsten an der Wurzel des Schnabels, die der edlen fehlen, dieser Unterschied ist aber wohl nicht wesentlich genug, sie von einander zu trennen. Der Nutzen dieser Borsten ist unbekannt, und ich zweifle sehr, dass sie irgend einen wesentlichen Einfluss in die Lebensart, Nahrung und Naturtriebe der Vögel haben, und dass sie daher für nichts weiter, wie für Arten unterscheidende Merkmale anzusehen sind.

Herr PALLAS zählt seine *langschnäbliche Atzel* (diesen letztern Namen hat er für den Linneischen *Gracula* gewählt) zu den Minos, von welchen sie doch in der Bildung des Körpers, im Bau des Schnabels, und den Verhältnissen der Theile wesentlich genug verschieden ist, zugeschworen das dieses Geschlecht des Herrn von Linné eines der unnatürlichsten des ganzen Systems, und aus Arten verschiedner Gattungen, deren Aehnlichkeit nicht einmahl in künstlichen Kennzeichen fest ist, zusammengesetzt sey, und also aus Vögeln bestehe, deren wesentlichere Verschiedenheit in Lebensart, Nahrung und Körperbau noch grösser ist. In der Vergleichung mit andern Geschlechtern stimmen sie zwar in mancher Rücksicht mit den Baumläufem, und den Bienenfressern, wie Herr Pallas auch schon bemerkt hat, überein, bey genauer Untersuchung wird man aber leicht ihre Verschiedenheit von denselben bemerken. Ganz anders aber verhält es sich, wenn man sie gegen diejenigen Vögel hält, welche Herr BRISSON *Icterus* und Herr



FIGURE 6. Hawaii 'o'o, *Moho nobilis* (Merrem, 1786). Latham's unfinished drawing, folio 379. Courtesy of British Museum (Natural History).

PALLAS *Xanthornus* nennt; man wird dieselbe Bildung des Schnabels, dieselbe Gestalt der Nasenlöcher, die bey beyden mit einer grossen Schuppe bedeckt, und vom Kopfe entfernt sind, eine ähnliche tiefgespaltene Zunge,

starke mit Schildern bedeckte Füsse, die an der äussern Seite aber fast gar nicht mehr zu erkennen sind, einen starken Hinternagel, einen langen Schwanz, eine gleiche Verhältniss der Flügel, kurz eine solche Aehnlichkeit in

allen äussern Theilen antreffen, das man hinlänglich berechtigt wird, von denselben auf die ähnliche Bildung der innern, auf gleiche Lebensart und Triebe, und auf übereinstimmende Nahrung zu schliessen. Es ist aber nothwendig diese Vergleichung nicht nach den Geschlechtskennzeichen, welche Herr Pallas und andre Systematiker von diesen Vögeln angegeben haben, anzustellen, sondern die Natur selbst zu Hülfe zu rufen, denn viele spezifische Unterscheidungszeichen sind als Gattungsmerkmale angenommen worden, vorzüglich der sternförmige Winkel mit dem sich der Schnabel über die Stirn erstrecken soll, und welchen wirklich nur zwey oder drey Arten besitzen.

Da der deutsche Name *Gelbvogel* so wenig wie der griechische *Icterus* und *Xanthornus* auf alle Arten dieser Gattung passt, so habe ich ihr lieber die Benennung *Atzel* geben wollen, da für die, wirklich zum Geschlechte *Gracula* gehörigen Vögel, sich der Name *Mino* zu schicken scheint, und also der erstere dadurch ohne Bedeutung war.

Die edle und langschnäbliche Atzel unterscheiden sich aber doch von den übrigen Arten durch einen längern Schnabel, höhere Füße, und eine schlankere Bildung, und könnten daher vielleicht als eine besondere Familie angesehen werden.

Die edle Atzel, welche zuerst durch die für COOK so unglückliche letzte Reise um die Welt bekannt geworden und nach Europa gebracht ist, hat die, von dem berühmten Weltumseger sogenannten *Sandwich-Inseln* zum Vaterlande, und ist mit einer ansehnlichen und vortreflichen Sammlung neuseeländischer Kunstsachen von dem Könige von Grossbritannien dem göttlichen Museum geschenkt worden. Ihre Federn, vorzüglich aber die wenigen gelben, welche sich unter den Achseln befinden, dienen den Bewohnern dieser Eylande, zur Ausschmückung ihrer Kleider, und vorzüglich der Helme, womit sie die Häupter ihrer Götzen bedecken, bey denen sie noch zur Verschönerung und Erhöhung des von den Federn des carmosinrothen Honigsaugers verfertigten Putzes, wie eine goldne Besetzung angewandt werden. Wahrscheinlich schätzen diese Insulaner sie auch um vieles höher wie die rothen Federn, da sich nur eine so geringe Anzahl derselben an dem Körper des Vogels befindet, und er vielleicht, wenn der Schluss von der geringen Anzahl der nach Europa gebrachten ausgestopfter Häute zu der Menge der ausgestopften carmosinrothen Honigsauger, auf die Verhältniss der Zahl, in der sie daselbst anzutreffen sind, richtig ist, nicht so häufig wie dieser daselbst gefunden wird.

Beschreibung der edlen Atzel

Sie ist von der Grösse eines Staats.

Ihr Schnabel ist länger wie der Kopf, länglich-kegelförmig, zugespitzt, oben und unten mit einer scharfen Kante versehen, wenig gekrümmt und schwarz. Die Nasenlöcher gehn durch (doch kann dieses auch ein Fehler des vor mir liegenden Exemplars seyn) sind etwas von der Stirne entfernt, und mit einer Schuppe bedeckt, welche bis zur Stirne reicht; und den Nasenlöchern eine fast halbmondförmige Gestalt giebt.

Der Kopf ist klein, und oben mit kleinen harten,

zugespitzten schuppenförmigen Federn bekleidet, unten aber mit an der Spitze haarartigen Federn versehen. Die Augen sind gross, und liegen in der Mitte des Kopfs.

Der Hals ist lang, der Körper schlang und gestreckt, die gelben Federn, welche unter den Achseln und in den Weichen liegen, sind lang und haarartig, welches eine nahe Verwandtschaft mit den Paradiesvögeln anzuzeigen scheint.

Die Flügel sind mittelmässig und erstrecken sich bis zur Hälfte des Schwanzes.

Die Schenkel sind kurz, die Füße aber in Vergleichung mit andern Vögeln dieses Geschlechts sehr lang; die Zehen haben ebenfalls eine beträchtliche Länge, die hintere ist fast so lang wie die Mittelzähe, die äussere und innere aber sind viel kürzer. Die Füße mit Schildern bedeckt und schwarz. Die Nägel sind gross, besonders aber ist der an der Hinterzähe von vorzüglicher Länge.

Der Schwanz ist lang und bestand in dem Exemplare, welches ich vor mir hatte, nur aus sieben Ruderfedern, und zeigte überhaupt merkliche Spuren der Verstümmelung. Zehn Federn könnte ich richtig bestimmen, es ist mir aber höchst wahrscheinlich, dass er zwölf besitze, nur mochte ich es nicht wagen dieselben hinzuzusetzen, weil dieselbe Feder wahrscheinlich an beyden Seiten fehlte. Von den vorhandenen waren die beyden mittleren zugrundet, die äussersten aber zugespitzt, und der Uebergang zwischen beyden fast unmerklich. Die beyden mittleren sind sehr lang, die Seitenfedern nehmen aber allmählig so sehr ab, dass die beyden äussersten nur bis zur Hälfte der Länge der mittlern reichen.

FARBE DER FEDERN. Sie ist glänzend schwarz, bis auf ein paar Federn unter den Achseln, und den untern Deckfedern des Schwanzes, welche schön gelb find. Die beyden äussern Ruderfedern des Schwanzes sind weiss, ihre Wurzel aber an der innern Seite schwarz, und an der äussern gelb: der Schaft ist schwarz, und an der Spitze ist eine schmale schwarze Linie.

MAASSE

Länge bis zur Spitze des Schwanzes	8" 0" 0"
Länge des Schnabels bis zur Stirn	1, 1, 5
Länge desselben bis zur Mundesöffnung	1, 2, 0
Länge des Schwanzes	3, 11, 0
Länge des Fusses	1, 4, 5
Länge der Mittelzähe (Nagel 3" 2")	0, 9, 5
Länge der innern Zähe (Nagel 3, 4)	0, 8, 0
Länge der äussern Zähe (Nagel 3, 1)	0, 9, 0
Länge der hintern Zähe (Nagel 4, 0)	0, 9, 2

The noble Magpie is so closely related to that bird which Mr. PALLAS calls the *long-billed Magpie* (*Gracula longirostra*) in its whole structure, in the relationships of its parts, and in all external characteristics so similar that we can have no scruples in considering both to be birds of one class. It is true that the long-billed Magpie differentiates itself through several bristles at the base of the beak, which are lacking in the noble one; this difference is really not significant enough to divide them. The use of these bristles is unknown, and I doubt very much that they have any significant influence on the mode of life, feeding and natural instincts of the

birds, and that they are not to be seen as anything more than differentiating marks for species.

Mr. PALLAS puts his *long-billed Magpie* (this latter name he has chosen for the Linnean *Gracula*) among the Minos, but from which it is quite different in the body structure, formation of beak, and the relationships of the parts, not to mention that this genus of Mr. von Linné is one of the most unnatural of the whole system, and is made up of species of different genera, whose similarity is not even fixed in the artificial characteristics; that is, it consists of birds whose more essential difference in mode of life, feeding, and body structure is even greater. In comparison with other genera they do, it is true, agree in many respects with the tree-creepers and honey-eaters, as Mr. Pallas has already remarked; further close examination, however, will allow us easily to notice its difference from these species. But it is a very different matter if it is held up against those birds which Mr. BRISSON calls *Icterus* and Mr. PALLAS *Xanthornus*; we find the same beak form, the same shape of nostrils—which in both are covered with a large scale and set at a distance from the head—a similar deeply cleft tongue; strong feet, covered with scales, which on the outer side are hardly distinguishable anymore; a strong hind claw, a long tail, a similar arrangement of the wings—in short we encounter such a similarity in all external parts that we are sufficiently justified in concluding that it has similar internal structure, a comparable mode of life and instincts and similar feeding habits. It is, however, necessary not only to undertake the comparison following the same species characteristics of Mr. PALLAS and other systematists of these birds, but also to call in nature itself to assist, for many specific characteristics have been accepted as marks of a genus, particularly the starlike angle by which the beak is supposed to stretch above the forehead, and which in reality only two or three species possess.

Since the German name *Yellowbird* suits all species of this genus as little as the Greek *Icterus* and *Xanthornus*, I have therefore preferred to give it the name *Magpie*, since for those birds belonging in reality to the genus *Gracula*, the name *Mino* seems proper, and therefore the first name had no significance.

The noble and long-billed *Magpie* are differentiated moreover from the other species by *longer bills*, *higher feet* and a *more slender form*, and can therefore be considered a special family.

The *noble Magpie*, first made known and brought to Europe by means of COOK'S unfortunate last voyage, is native to the *Sandwich Islands*, so named by the famous navigator, and was presented, together with a considerable and excellent collection of New Zealand artifacts, to the Göttingen Museum by the King of Great Britain. Its feathers, principally however the few yellow ones, which are found under the shoulders, are used by the inhabitants of these islands for decorating their clothes, principally the helmets with which they cover the heads of their idols; for beautifying and heightening of the plumes of the crimson honeyeaters in the finished attire they are used like a golden trimming. Probably these islanders value them also much more highly than the red feathers, since only such a small amount of them are found on the body of the bird, and

perhaps it is not found so frequently there, if the conclusion is correct about the limited number of stuffed skins brought to Europe in comparison with the amount of stuffed skins of the crimson honeyeater, i.e., the relationship of the numbers is similar in which they are to be found.

Description of the Noble Magpie

It is the size of a starling.

Its *beak* is longer than the head, oblong-conical, tapering, with a sharp edge above and below, a little curved and black. The nostrils are pierced (although this might be a fault of the specimen I have in front of me), somewhat removed from the forehead, and covered with a squama, which extends as far as the forehead, lending to the nostrils an almost half-moon shape.

The *head* is small, and covered on top with small hard, pointed scaly feathers, but beneath with hairlike feathers at the extremity. The *eyes* are big, and lie in the middle of the head.

The *neck* is long, the body serpentine and elongated; the yellow feathers, which lie under the shoulders and in the flanks, are long and hairlike, which seems to indicate a close relationship with the birds of paradise.

The *wings* are average and extend to halfway up the tail.

The *thighs* are short, the *feet*, compared however with other birds of this genus, are very long; the *toes* are likewise of considerable length: the hindmost is almost as long as the middle one, but the outer and inner are much shorter. The feet are black and covered with scuta. The nails are big, especially the one on the hind toe, which is immensely long.

The *tail* is long and, in the specimen before me, consisted only of seven tail feathers and moreover showed marked traces of mutilation. I was able to determine accurately ten feathers, but it seems highly probable to me that it possessed twelve, but I would not like to venture the addition of these, because the same feather could be lacking on both sides. Of those available, both the middle ones were rounded, the outer ones, however, tapering and the transition between both almost unnoticeable. The middle two are very long but the side feathers taper away gradually so much that the outermost extend only to half the length of the middle ones.

COLOR OF THE FEATHERS. It is a brilliant black, except for a few feathers under the shoulders and under the coverts of the tail, which are a beautiful yellow. Both the outer tail feathers are white, their root on the inner side, however, black and on the outer side yellow: the stem is black and at the point is a narrow black line.

MEASUREMENTS

Length to the extremity of the tail	.....	8" 0" 0"
Length of the beak to forehead	.....	1, 1, 5
Length of beak to the mouth opening	.....	1, 2, 0
Length of the tail	.....	3, 11, 0
Length of the foot	.....	1, 4, 5
Length of the middle toe (nail 3" 2")	.....	0, 9, 5
Length of the inner toe (nail 3, 4)	.....	0, 8, 0
Length of the outer toe (nail 3, 1)	.....	0, 9, 0
Length of the hind toe (nail 4, 0)	.....	0, 9, 2

Gmelin, not realizing that Merrem's *edle* Atzel was the same species as that which Latham had described in 1782 as the "Yellow-tufted Bee-eater," described the former as a variety of his *Gracula longirostra* (1788–1793, vol. 1(1):398, no. 9) as follows:

β. *Oriolus nobilis*, edle Atzel. *Merrem Beytr.* I. p. 8. t. 2.

Habitat . . . β. *in insulis Sandwich ultra 8 pollices longa.*

β. *Sturni magnitudine; rostri basi nullis setis cincta; naribus semilunaribus; colore splendide nigro, pennarum quorundam humeralium, et tectricum caudae inferiorum flavo, rectricum extimarum albo, basi extus lutea differt.*

Sir Joseph Banks apparently received nine third-voyage specimens of *Mohonobilis* which are referred to in Solander catalogue entry no. 40 (Medway 1979:323). The two which then remained were described in ms lists 2 and 3, no. 41, the following being from ms list 3:

fasciculata.

Merops nigro-nitens crisso, fasciculoq axillari flavis, rectricibus 2 longissimis, exterioribus albis. 2. Owyhee.

Latham based his description (1781–1782: 683, no. 18) of the "Yellow-tufted Bee-eater" on specimens then in his own collection and that of the Leverian Museum:

SIZE of a Lark: length, from bill to tail, fourteen inches. Bill an inch and a half long, pretty much bent, and sharp at the tip; the nostrils covered with a membrane: tongue divided into threads at the end: the general colour of the plumage is glossy black: the feathers about the head and throat short, and pointed: beneath each wing is a large tuft of yellow feathers, which do not appear when the wing is closed: on the vent is another patch of the same colour: the tail is greatly cuneated; the two middle feathers are seven inches in length, and the outer ones only two inches; both the outer feathers are white on the outer webs and tips; the others black; the ends are pointed: the legs are black: the outer and middle toes connected to the first joint.

These birds were met with in great plenty at *O-why-hee*, and others of the *Sandwich Isles*, by our late voyagers; at which place the natives catch the birds alive, and, after plucking out the yellow feathers, give them their liberty again, making use of the feathers in forming the various ornaments and dresses; great variety of the specimens of which are to be seen in the *Leverian Museum*.

Latham drew the species but his illustration (Latham n.d., folio 379) is unfinished. He

believed (1787:120) the bird mentioned by Ellis (1782, vol. 2:156) "of the long tail feathers of which the natives of *Sandwich Islands* make fly-flaps, to be this very species."

Gmelin based his description (1788–1793, vol. 1(1):465, no. 19) of *Merops niger* on Latham's 1782 description. He failed to recognize that Latham's species was the same as the one Merrem had described. Gmelin's description is as follows:

niger.

M. niger, fasciculo plumarum magno pone alas, crissoque flavis, cauda cuneiformi, rectricibus daubus extimis extus et apice albis.

Yellow-tufted Bee-eater. *Lath. Syn.* I. 2. p. 683. n. 18.

Habitat in insula O-why-hi et vicinis, alaudae magnitudine, 14 pollices longus, frequens; flavae pennae ornamenti loco infervunt incolis. Nares membrana tectae; lingua apice filamentosa; pennae capitis gulaeque breves, rectricesque acuminatae; duae intermediae 7, extimae 2 pollices longae.

In 1790 Latham (1790, vol. 1:275, no. 19) described his *Merops fasciculatus*. He recognized that his "Yellow-tufted Bee-eater" and Merrem's *Gracula nobilis* were one and the same species, but at that date he had seen material from which he was able to distinguish two further birds which he then regarded as varieties of his *Merops fasciculatus*. His 1790 description is as follows:

fasciculatus.

M. nigro-nitens, crisso fasciculoque axillari flavis, cauda maxime cuneiformi, rectrice extima toto, proxima latere exteriore, alba.

Merops niger, *Gmel. Syst.* i. p. 465. *Gracula nobilis*, *Merrem. Ic.* p. 7. f. 2. Yellow-tufted Bee-eater, *Lath. Syn.* ii. p. 683. 18.—*Id. Sup.* p. 120.

HABITAT in insulis Sanduicensibus maris pacifici; magnitudine Alaudae—14 pollices longus.—Pennae flavae ab incolis ad vestimenta varia adhibitae. Rostrum nigrum: nares membrana tectae: lingua apice ciliata: pennae capitis et gulae curvae, acutiusculae: pedes nigri.

β. *M. nigro-nitens*, crisso fasciculoque axillari flavis, cauda cuneiformi, rectricibus apice albis.

Yellow-tufted Bee-eater, *Dixon's Voy.* p. 357. t. 19.

HABITAT cum priore, praesertim in Owhyhee. Variat rectricibus 2 intermediis unicoloribus.

γ. *M. nigro-nitens*, crisso flavo, cauda cuneiformi, hypochondriis rufis.

HABITAT cum praecedentibus.

In hac ave rectrices omnes corpore concolores. An sexus alter?

As can be seen, Latham's variety β of 1790 was based on the description and figure of *Moho apicalis* Gould, 1860 from Oahu which appeared in Dixon's account (1789:357-358, pl. 19) of a bird which he described under Latham's name "Yellow-tufted Bee-eater," noting however that his bird differed from that described by Latham in having all the tail feathers spotted with white at the ends. He considered that Latham's bird was probably either a hen or a young bird. Latham later (1801:149, no. 3, Variety A; 1821-1828, vol. 4:157, no. 2, Variety A) again described Dixon's bird as a variety of his "Yellow-tufted Bee-eater," but it was not until 1860 that the bird in question was first validly described as a separate species by Gould, who based his description on two specimens then in his possession. Wilson and Evans have pointed out (1890-1899:103) that the bird described and illustrated by Dixon must have been collected on the island of Oahu, which the ships of the Portlock-Dixon voyage visited more than once in 1786 and 1787.

As early as 1790 Latham must have seen at least one specimen of the bird which he then described as variety γ of his "Yellow-tufted Bee-eater." He later stated (1801:149, no. 3, Variety B) that, among his "Yellow-tufted Bee-eaters," he "remarked another variety, which differed in having the tail feathers wholly black, and the sides under the wings rufous." By 1822 he appears to have seen more than one specimen of this variety, for he then said (1821-1828, vol. 4:158, no. 2, Variety B), when describing what he now called the "Yellow-tufted Honey-eater," that "among many specimens I have remarked more than one, in which the tail feathers were wholly black; sides under the wings rufous; but whether such birds differed in age or sex was not known." Latham did not say where he saw these specimens, but his 1790 and later descriptions are clearly of *Moho braccatus* from Kauai, a species first validly described by Cassin in 1855 from a specimen in the Academy of Natural Sciences of Philadelphia which had been collected by John K. Townsend in 1835.

When writing of *Moho braccatus*, Wilson and Evans (1890-1899:99) considered "that

it should have been obtained even by Cook's people is only natural, since his ships more than once visited Kauai . . . to which island it is peculiar." Bryan and Greenway (1944:80) stated that a specimen of *Moho braccatus* was taken on Cook's third voyage. However, we have already seen that *Vestiaria coccinea* is the only bird species known to have been procured at Kauai during the visits of 1778 and 1779. On the other hand, we know that the *Queen Charlotte* and *King George* visited Kauai more than once in 1786 and 1787 in the course of the Portlock-Dixon voyage. While those ships lay off Kauai in January 1787, the Hawaiians brought large numbers of *Vestiaria coccinea* and "these birds being purchased by us with great avidity, the natives were induced to bring every thing of the kind they could lay hold of . . ." Furthermore, Dixon "took two or three opportunities of going on shore with his gun . . . he did not find game very plentiful, yet never returned without some spoils of the field, such as ducks, terns, a species like our water-hen, and various other kinds" (Dixon 1789:112-113). The *Queen Charlotte* and *King George* returned to England in August 1788 and we know that a number of bird specimens were taken back. Dixon (1789:356-357) "understanding, after I came home, that some of the birds I brought with me had not been engraved . . .", published "figures of four of the most curious" (including *Moho apicalis*) and Portlock (1789) published illustrations of several more which had been procured on the voyage, including one which was of a White Tern from the Sandwich Islands. Dixon, at least, must have had contact with Latham. With Latham's permission, he published various of Latham's descriptions from the *General Synopsis of Birds* and in one case stated that "Mr. Latham is of opinion," which implies that Latham saw the specimen in question (Dixon 1789:357-360). Furthermore, Latham himself specifically mentioned having seen two owls Dixon brought from the Sandwich Islands (Latham 1801:56).

Thus the Portlock-Dixon voyage had every opportunity to obtain a specimen or specimens of *Moho braccatus* while at Kauai in

1786 and 1787, and Latham saw at least some of the birds which had been collected on the voyage. There seems little doubt therefore that Latham's 1790 reference to *Moho braccatus* was based on a specimen or specimens which had been obtained at Kauai during the Portlock-Dixon visits.

There appear to have been three specimens of *Moho nobilis* in the Leverian Museum at the time of its dispersal in 1806. The first two of them were sold on the 30th day (9 June 1806) of the sale (Donovan 1806:172):

3591 *Merops fasciculatus*, yellow tufted bee eater, m. and fem. rare

They were sold to one Vaughan for £3 14s 0. The annotated sale catalogue in the British Museum (Natural History) has the added ms note "Owyhee." I do not know what became of these specimens.

The third specimen was sold on the 42d day (23 June 1806):

4947 Fasciculated bee-eater, *Merops fasciculatus* (Donovan 1806:228).

This was sold to one Brogden for £2 5s 0. The annotated sale catalogue in the British Museum (Natural History) has the added ms note "yellow tuft under wing Small Black bird with long tail feathers." The fate of this specimen is also unknown.

A Leverian Museum specimen was drawn by Sarah Stone. One of her illustrations has been reproduced by Force and Force (1968:47). Another original watercolor drawing by her (virtually identical to the preceding) is in the Dixon Library, Sydney (Q77/37, opposite p. 120).

No third-voyage specimens of *Moho nobilis* are known to survive. We have already seen that there is no evidence that the specimen now in the Merseyside County Museums at Liverpool, Derby no. 5280 purchased by Stanley at the Bullock sale in 1819, came from this voyage. I do not know the origin of the specimen illustrated by Temminck (Temminck and Laugier 1828:471) but there is nothing to link it with Cook's voyage.

Latham said in 1782 that this species was

"met with in great plenty at O-why-hee, and others of the *Sandwich Isles*." I do not know where Latham got this information and there is no evidence that any of the other *Moho* species were collected on the third voyage. Peale (Cassin 1858:171) said that "the *Oo* is found in most of the woody districts of the Island of Hawaii." Wilson (Wilson and Evans 1890-1899:108) found it to be still fairly common in the Kona district in the 1880s. Munro (1944:86) recalled that in 1891 and 1892 it was common above Kawaaloo in Kona but by 1894 it had disappeared from there. Perkins (1893:109) said that it was a common bird in the lower forest of the Kona district. It is presumed to have become extinct sometime after the turn of the present century (Berger 1972:121).

Hawaii Thrush or 'oma'o *Phaeornis obscura obscura* (Gmelin, 1789)

Figure 7

Banks received one third-voyage specimen of the Hawaii Thrush which is referred to in Solander catalogue entry no. 122 (Medway 1979:333) and later briefly described under *Turdus* in ms list 3, no. 150 as follows (Dryander n.d.):

cinereus

T. corpore supra fusco subtus cinereo. Sol. cat. 122. Sandwich Isles.

Latham (1783:344, no. 42) described his "Dusky Flycatcher" from a specimen then in the Leverian Museum. His description is as follows:

LENGTH seven inches and three quarters. Bill broad at the base, where there are a few bristles, and slightly notched near the tip: general colour of the plumage brown, palest beneath, inclining to ash-colour, with a tinge of rufous on the belly: tail three inches long; even at the end, and the feathers rather pointed: legs dusky. Inhabits the *Sandwich Islands*.

An identical description appeared in his *General History of Birds* (1821-1828:211-212, no. 91).

Latham's 1783 description was the basis of Gmelin's account (1788-1793, vol. 1(2):945, no. 76) of *Muscicapa obscura*:



FIGURE 7. Hawaii Thrush or 'oma'o, *Phaeornis obscura obscura* (Gmelin, 1789). Watercolor by William Ellis, folio 77. Courtesy of British Museum (Natural History).

obscura.

M. fusca, abdominis tinctu in fuscum vergente, rectricibus longis, aequalibus, acuminatis. Dusky Flycatcher. *Lath. Syn. II. 1. p. 344. n. 42. Habitat in insulis Sandwich, 7½ pollices longa. Rostrum prope apicem leviter emarginatum; pedes atrii.*

The following year, Latham (1790, vol. 2: 479–480, no. 52) also described the species under the name *Muscicapa obscura*.

I do not know what became of the Banks specimen, but one specimen of *Phaeornis obscura* was in the Leverian Museum at the time of its dispersal in 1806. Lot 1413, sold on the 12th day (16 May 1806), went to Fichtel of Vienna for 10/6d, the relevant catalogue entry reading (Donovan 1806:59):

1413 Thrush, Christian's Island

Lot 2565, sold on the 22d day (29 May 1806), also went to Fichtel, for 15/6d (Donovan 1806:109):

2565 Thrush, Christian's Isle, under the Line

Alongside this lot in the Middleton copy of the sale catalogue is the ms note "a Speices [*sic*] of Merops not a Thrush." No doubt it was these two birds which were entered together in the old catalogue at the Naturhistorisches Museum in Vienna as follows:

1806 III. 104 Thrush Christians Isle ♂ (199) T. flavipes 1
a ————— ♀ (200) 1

Pelzeln (1873:25) said that a male of *Turdus flavipes* Vieillot (199, Thrush, Christian's Isle) was then still in the collection, but not the female (200). This specimen of the Yellow-legged Thrush *Platycichla flavipes* (Vieillot, 1862) of South America is still in the Naturhistorisches Museum, with the present registration no. 16.343, and is undoubtedly the bird purchased by Fichtel as Lot 2565 of the Leverian sale. The following year Pelzeln (1874:161–162) said that determination of the specimen of *Pithys rufigula* which he had earlier mentioned (1873:113), with the remark that the specimen was no longer in the collection, had been "founded

on the inventory, in which the bird is named *Turdus pectoralis*, which synonym really belongs to *Pithys rufigula*." He went on to say that he had since found "the specimen in question labelled '*Turdus modestus*, Natterer', which designation was also added in the inventory. In the old catalogue and on the label of the specimen was also written: 'Von H. Fichtel, 1806, N. 200, Auction N. 1413, foemina, Christian's Isle under the Line'." On examination, the specimen proved to be *Phaeornis obscura*.

It seems clear that this specimen was the one which had been entered in the old catalogue under entry 1806 III. 104a (200). It appears that Pelzeln may have been somehow confused when he said that the specimen labelled *Turdus modestus* Natterer [= the Eyebrowed Thrush *Turdus obscurus* (Gmelin, 1789) of Asia] was the same specimen as that to which he had earlier referred under the name *Pithys rufigula* [= Rufous throated Antbird *Gymnophithys rufigula* (Boddaert, 1783) from South America]. However, his examination showed the specimen to be clearly *Phaeornis obscura* and there seems little doubt from the information then on the label that this specimen was the same as that purchased by Fichtel as Lot 1413 at the Leverian sale. This bird is still in the Naturhistorisches Museum, with the present registration no. 51478. Pelzeln considered that, although marked as a female, the specimen agreed very well with Cassin's (1858:155) description of the male of *Phaeornis obscura*. Pelzeln had little doubt that the specimen was the type of Latham's "Dusky Flycatcher," the only difficulty being the stated habitat. This species is known only from the Hawaiian Islands and the locality "Christian's Island," which may itself be a mistake for Christmas Island, was probably erroneously attributed to the Leverian Museum specimen when the sale catalogue was compiled. I have said elsewhere (Medway 1979:343) that two specimens of *Phaeornis obscura* appear to have been in the Leverian Museum at the time of its dispersal and that they were sold to Fichtel. Further investigation has now established that one of these birds (1806 III. 104, Lot 2565 of Leverian sale) was a

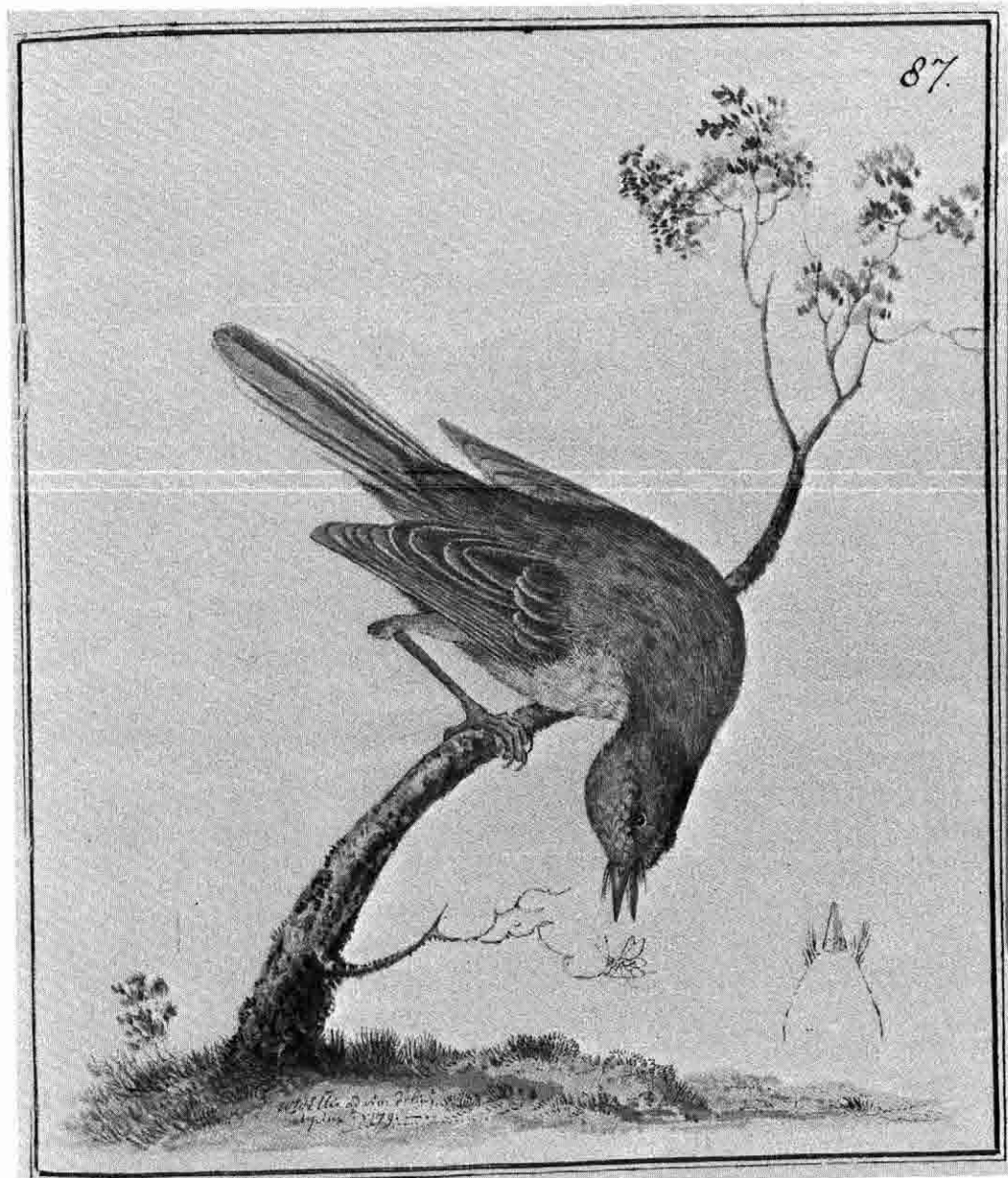


FIGURE 8. Hawaii Flycatcher or 'elepaio, *Chasiempis sandwichensis sandwichensis* (Gmelin, 1789). Watercolor by William Ellis, folio 87. Courtesy of British Museum (Natural History).

specimen of *Platycichla flavipes* and the other (1806 III. 104a, Lot 1413 of Leverian sale) a specimen of *Phaeornis obscura*, and that both specimens still exist in the collections at Vienna.

Henshaw (1902:29) said that the Hawaii Thrush was to be "found abundantly all over

the island of Hawaii, but only in the denser forests above one thousand feet." Rothschild (1893:62) recorded that it was "not uncommon on Hawaii and is especially numerous in the district of Kona." Wilson and Evans (1890-1899:122) reported it to be "still fairly common in most districts of Hawaii." The

species is still fairly common in suitable habitat above 3000 feet elevation (Berger 1972:105, Hawaii Audubon Society 1975:62).

Hawaii Flycatcher or 'elepaio *Chasiempis sandwichensis sandwichensis* (Gmelin, 1789)

Figure 8

It seems that at least two specimens of the Hawaii Flycatcher were taken back to England on the third-voyage ships. One of them went to Sir Joseph Banks. It is referred to in Solander catalogue entry no. 142 (Medway 1979:336) and later described in ms list 3, no. 168 under *Muscicapa* as follows (Dryander n.d.):

Muscicapa

subcristata fusco rufescens ventre albido tectricibus alarum apice pallidis, rostro albo pedibusque nigris 1 Sol Cat 142. Sandwich Isles

This specimen formed the basis of Latham's 1783 description (1783:344, no. 41) of the "Sandwich Flycatcher":

LENGTH five inches and a half. Bill black, bristly at the base, where it is yellowish: forehead buff-coloured: over the eye a white line: the upper parts of the body brown: wing coverts edged with pale rust-colour: greater quills brown: both of them tipped with dusky white: tail brown: all the feathers, except the two middle ones, tipped with white: the chin is pale, marked with dusky streaks: on each side of the neck a mixture of white: breast rust-colour: belly and vent yellowish white: legs black. Inhabits the *Sandwich Islands*. In the collection of Sir Joseph Banks.

A virtually identical description appeared in his *General History of Birds* (1821–1828, vol. 6:211, no. 90).

Gmelin used Latham's 1783 description as the basis for his *Muscicapa sandwichensis* (1788–1793, vol. 1(1):945, no. 75):

sandwichensis.

M. fusca, subtus ochroleuca, fronte ex fusco lutescente, superciliis albis, mento pallido striis atris picto, pectore et tectricum alarum margine ferrugineo, remigibus rectricibusque fuscis apice albis. Sandwich Fly-catcher. *Lath. Syn.* II. 1. p. 344, n. 41. *Habitat in insulis Sandwich, 5½ pollices longa.* Rostrum

nigrum, basi flavicans; pedes nigri; rectrices intermedie totae fuscae.

Latham later described his "Sandwich Flycatcher" under the name *Muscicapa sanduicensis* (1790, vol. 2:479, no. 51).

In 1783, Latham also described (1783:345, no. 43) his "Spotted-winged Flycatcher" on the basis of a specimen then in the Leverian Museum, saying that it was "supposed" to inhabit the Sandwich Islands. His description follows:

BILL black; base of the under mandible yellow at the edges: the plumage on the upper parts of the body ferruginous brown; the head palest: on each of the wing coverts, at the tip, is a round ferruginous white spot: the rump ferruginous: quills dusky: the under parts of the body pale reddish brown, changing to reddish white on the bottom of the belly: vent the same, but the feathers tipped with a still paler colour: tail brown; the outer feather marked at the tip of the inner web with white: legs black. Supposed to inhabit the *Sandwich Islands*.

Again a virtually identical description appeared in his *General History of Birds* (1821–1828, vol. 6:212, no. 92).

To this bird Gmelin (1788–1793, vol. 1(2):945, no. 77) gave the name *Muscicapa maculata*:

maculata.

M. ferruginea, subtus dilute spadicea, remigibus atris, tectricibus alarum macula prope apicem ex ferrugineo alba, rectricibus fuscis, extimis intus apice albis. Spotted-winged Flycatcher. *Lath. Syn.* II. 1. p. 345, n. 43. *Habitat in insulis Sandwich.* Rostrum *nigrum; mandibulae inferioris basi margine flava.*

Latham also gave it the same name in 1790 (1790, vol. 2:480, no. 53).

Sclater (1885:17–18) reproduced Latham's descriptions of the "Sandwich Flycatcher" and "Spotted-winged Flycatcher" and said that the latter was generally supposed to be the female of the former. Wilson and Evans (1890–1899:126) considered that Latham's description of the "Sandwich Flycatcher" did not accord ill with the younger stage of the Hawaiian bird, and that his "Spotted-winged Flycatcher" was generally regarded as specifically identical. Considerable variation exists among individuals of each island race of

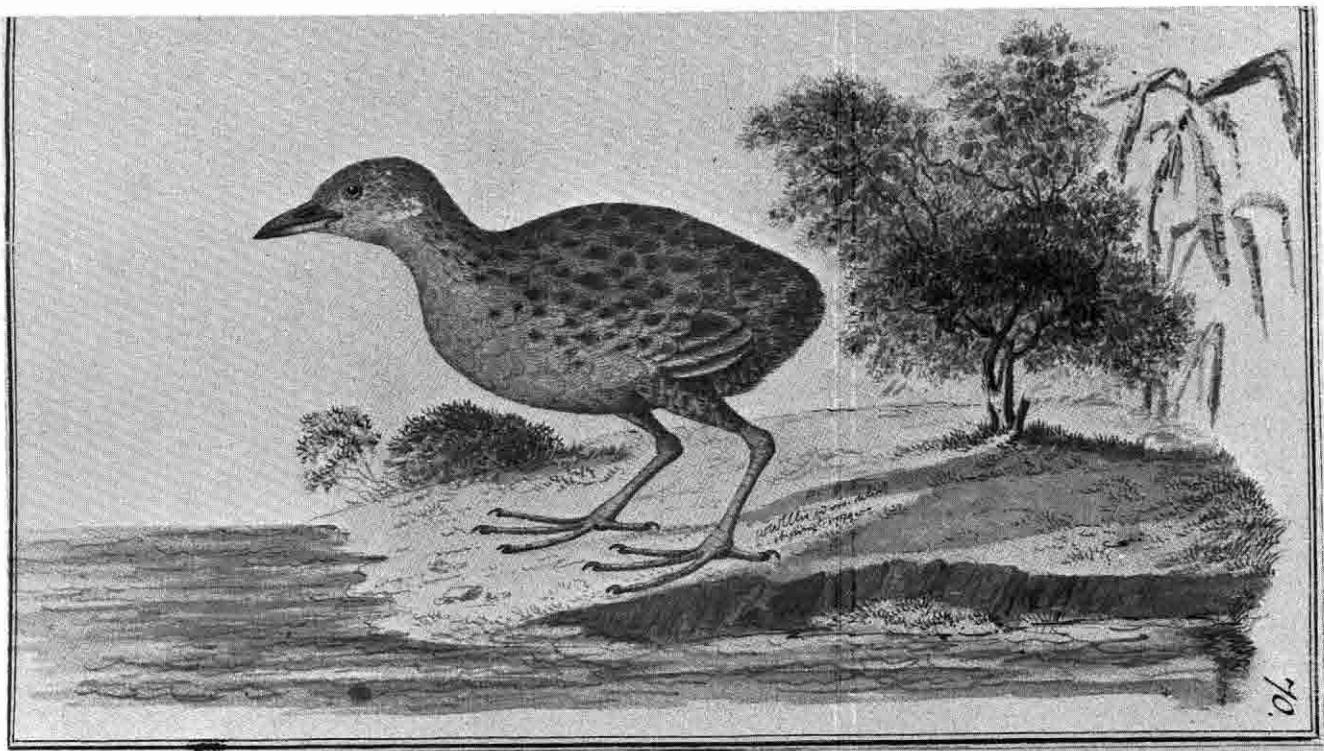


FIGURE 9. Hawaiian Rail or moho, *Porzana sandwichensis* (Gmelin, 1789). Watercolor by William Ellis, folio 70. Courtesy of British Museum (Natural History).

Chasiempis sandwichensis (Hawaii Audubon Society 1975:61) and the intermediate color phases between immature and fully adult plumage of the Hawaii race are poorly understood (Berger 1972:113).

I do not know what became of the Banks specimen and it cannot be traced through Banks's 1792 donations to the British Museum and Hunter. Wilson and Evans (1890–1899:126) could not find any mention of the Leverian Museum specimen in the sale catalogue of that collection (Donovan 1806) and neither can I.

Presumably the 'elepaio was common on Hawaii at the time of Cook's visit in 1779, since Perkins (1893:109) recorded that the single species of *Chasiempis* found in Kona was one of the commonest birds. Wilson and Evans (1890–1899:127) said that it was extremely common on Hawaii. It is still to be found there, although its distribution and relative abundance are poorly understood (Berger 1972:113).

Hawaiian Rail or moho *Porzana sandwichensis* (Gmelin, 1789)

Figure 9

Banks received two third-voyage specimens of a *Rallus* from the Sandwich Isles which are referred to in Solander catalogue entry no. 110 (Medway 1979:332). They were later described in ms list 3, no. 125 under *Rallus* as follows (Dryander n.d.):

obscurus

R. corpore supra nigro et fusco variegata subtus
obscuri rufescente immaculato 2
Sol. cat. 110. Sandwich Isles.

Latham based his 1785 description (1785:236, no. 14) of the "Sandwich Rail" on these specimens:

SIZE small. Bill dusky ash-colour: general colour of the plumage pale ferruginous; the feathers on the upper parts darkest in the middle: tail short, hid by the upper coverts: legs dusky flesh-colour.
Inhabits *Sandwich Isles*. Was also found on the island of *Tanna*; but the plumage is darker on the upper parts; and the bill and legs yellowish. Sir *Joseph Banks*.

A virtually identical description appeared in his *General History of Birds* (1821–1828, vol. 9:381, no. 21).

Wilson and Evans (1890–1899:176) pointed out that "Latham was no doubt in error when he imagined that a bird like this could also inhabit Tanna, which is one of the New Hebrides, and, indeed, Mr. Wiglesworth (*Aves Polyn.* p. 61) identifies the latter with *Ortygometra cinerea* (Vieillot)." The White-browed Rail from Tanna is *Poliolimnas cinereus tannensis* (Forster, 1844). It was discovered there in August 1774 during Cook's second voyage. J. R. Forster described it under the date 12 August 1774 as *Rallus tannensis* and it was drawn by his son (folio 131; Lysaght 1959:303). William Anderson also described it in his second-voyage manuscript "Characteres breves . . ." as *Rallus flavidus* from Tanna. Latham's reference to the Tanna bird was undoubtedly based on Anderson's description for "Characteres breves . . ." was then in Banks's possession, where we know it was consulted and used by Latham (Medway 1979:317–318).

Gmelin based his *Rallus Sandwichensis* (1788–1793, vol. 1(2):717, no. 22) on Latham's 1785 description of the "Sandwich Rail":

Sandwichensis

R. pallide ferrugineus, rostro obscuro cinereo, pedibus obscure incarnatis.

Sandwich Rail. *Lath. Syn.* III. I. p. 236. n. 14.

β) *Rallus* rostro pedibusque flavicantibus. *Habitat exilis in insulis Sandwich, β) in insula Tanna.*

The following year, Latham also described (1790, vol. 2:759, no. 14) the species under the name *Rallus sanduicensis*.

In 1785 Latham also described his "Dusky Rail" from a specimen then in the Leverian Museum. His description (1785:237, no. 16) is as follows:

LENGTH six inches. Bill scarcely one inch; colour dusky black; edges of the mandibles yellowish: all the upper parts of the plumage deep brown, with a ferruginous tinge, and streaked with black: beneath ferruginous brown: legs two inches long, red brown.
Inhabits the *Sandwich Islands*.

He described it again in his *General History of Birds* (1821–1828, vol. 9:381, no. 23).

Stresemann (1950:81) considered that Latham's "Dusky Rail" seems to be a synonym of his "Sandwich Rail" and thought that Latham had forgotten he had already examined the same species in the Banksian cabinet. This seems quite possible when one bears in mind the large number of specimens Latham examined in various repositories when preparing his *General Synopsis of Birds*. Rothschild, too, considered (1893–1900:240) that if Latham's "Dusky Rail" was really from the Sandwich Islands, it was probably the same as his "Sandwich Rail."

Gmelin based his description (1788–1793, vol. 1(2):718, no. 24) of *Rallus obscurus* on Latham's "Dusky Rail":

obscurus.

R. fuscus nigro-striatus, subtus ex ferrugineo fuscus, nostro nigro, pedibus spadiceis.

Dusky Rail. *Lath. Syn.* III. I. p. 237. n. 16.

Habitat in insulis Sandwich, 6 pollices longus.

Mandibularum acies flavicans.

Latham also described it the following year (1790, vol. 2:759, no. 16) as *Rallus obscurus*.

The Leverian Museum specimen on which Latham based his description was no doubt disposed of at the sale of that collection in 1806. Wilson and Evans (1890–1899:171) were unable to trace the fate of this specimen and I have not been able to identify it in the sale catalogue.

Only one rail species is known to have been met with during Cook's visits to the Hawaiian Islands.

We have already seen that Clerke recorded from the Island of Hawaii "a Rail with very short wings and no tail, which on that account we named *Rallus ecaudatus*." It was no doubt this species which Ellis drew. His folio 70, dated 1779, is almost certainly of specimens collected while the ships were at Kealahou Bay. It also seems certain that the two specimens which Banks received had been collected on Hawaii. The Leverian Museum specimen, if it was from the Sandwich Isles, must also it seems have been collected on Hawaii.

We know that Banks still possessed two

specimens when the third ms list (Dryander n.d.) was compiled. It is quite likely that at least one of them was still in his possession when the 1792 donations to Hunter and the British Museum took place. We earlier concluded that any bird specimens from Cook's voyages William Bullock possessed he probably received solely as a result of his 1813 exchange with the Royal College of Surgeons; and that any such specimens had probably formed part of the 1792 Banks donation to the British Museum, which almost certainly included many specimens from Cook's voyages and a number of Latham's types. We have also concluded that only those specimens which Bullock himself claimed to have come from Banks or Cook should be seriously considered as possible specimens from Cook's voyages.

One such specimen was the bird which comprised Lot 37 of the 21st day (3 June 1819) of the sale of Bullock's collection. This bird was described (Bullock 1819:127) as being "Rail, undescribed; from the voyage of Captain Cook." Extant annotated copies of the sale catalogue confirm that this specimen was purchased by Temminck for £1 15s 0. It is now in the Rijksmuseum van Natuurlijke Historie, Leiden, and its identity has often been discussed. It seems beyond doubt that it was the very specimen to which Schlegel (1865:25–26) referred when describing *Crex sandwichensis*, saying that it was "Adulte, iles Sandwich, voyage de Cook." Hartlaub (1892:398) said that this specimen was the one which had been obtained by Temminck at Bullock's sale. Finsch (1898:79) considered that this "may have been the case; but it cannot be proved that it was the specimen in question." However, he considered that Schlegel's *Crex sandwichensis* was "most certainly not" the same as *Rallus sandwichensis* and *Rallus obscurus* of Gmelin and he renamed the bird *Pennula wilsoni*. On the other hand, Rothschild (1893–1900:240) thought that Latham's description of the "Sandwich Rail" suited the Leiden bird very well, "in fact about as well as any of Latham's descriptions suit a bird known to us," and he could see no reason for giving a new name to the specimen as Finsch did. He further considered

that the best proof of the identity of Gmelin's *Rallus sandwichensis* with Finsch's *Pennula wilsoni* is the Ellis drawing, which he said agrees exactly with Latham's description of the "Sandwich Rail." Hartlaub (1892:398, 1896:40) and Sharpe (1894:336) also considered the Leiden specimen to be of Gmelin's *Rallus sandwichensis*.

I do not think that there can be any real doubt that the bird described by Schlegel and Finsch was the same bird Temminck had obtained at the Bullock sale, and that it is in fact a specimen of Gmelin's *Rallus sandwichensis*. But could it have been collected on Cook's third voyage?

Only one *Rallus* specimen was included in Banks's 1792 donation to Hunter and it appears (Shaw 1806, entry no. 256) to have been a specimen of the Banded Rail *Rallus philippensis* (Linnaeus, 1766) which we know was represented in the Banks collection by third-voyage specimens from the Tonga Islands (Medway 1979:332–333). The Hunter specimen in question was the only *Rallus* specimen which went to the British Museum in 1845. If Banks in 1792 still possessed one (or both) of the third-voyage specimens on which Latham based his "Sandwich Rail," then it (or they) probably formed part of his donation to the British Museum. Thus one of the Banks specimens of Latham's "Sandwich Rail" could have been included among the birds Bullock received from the Royal College of Surgeons in 1813. Bullock himself claimed that the rail in Lot 37 of the 21st day of his sale was "from the voyage of Captain Cook." It is therefore quite possible that he had obtained the Leiden specimen from the Royal College of Surgeons in 1813; that it had formed part of the Banks donation of 1792 to the British Museum; and that it is one of the Banks third-voyage specimens on which Latham based his "Sandwich Rail" and therefore a syntype of Gmelin's *Rallus sandwichensis*.

We know from Clift (1836) that Bullock mounted his birds and that the specimens he received in 1813 from the Royal College of Surgeons were removed from the old jars in which they had been kept no doubt from the time when they had been in Banks's posses-

sion. Finsch (1898:78) noted that the Leiden specimen in question was "stuffed and not too well; the stuffing, however, is apparently not of very old date, as may be judged from the artificial eyes (with red irides), which seem to be of enamelled glass, or—at any rate—of a kind, which was unknown in the beginning of this century. The wire used for stuffing is of brass, as commonly used by the taxidermists of the Leyden Museum." The Leiden specimen is still in remarkably good condition, as are other Hawaiian bird specimens in its collection which were obtained at Bullock's sale. Extant bird specimens from Cook's voyages in the Merseyside County Museums, Liverpool, and the Naturhistorisches Museum, Vienna, are also in a remarkably good state of preservation. Admittedly, those specimens were formerly in the Leverian Museum. However, there would seem to be no reason why the Leiden rail specimen should not still be in good condition—assuming that it was in a reasonable state when Bullock received it, and accepting that it has been well cared for ever since, particularly after Temminck received it in 1819.

Greenway (1967:236) thought it possible, but not probable, that there were once two species of small rail on the Island of Hawaii. He noted however that specimens of two color forms exist—one pale, the other dark. He considered that they are of a single species and that the pale form (of which the Leiden bird is an example) perhaps represents an immature plumage and is the *Rallus sandwichensis* of Gmelin; and that the dark form is the *Pennula millsii* of Dole (1879), a view which has been shared by Ripley (1977:236–237). I consider it more than probable that the *Rallus ecaudatus* of Clerke, the rail depicted in Ellis folio 70, and the "Sandwich Rail" of Latham (on which Gmelin based his *Rallus sandwichensis*) all represent one and the same species, namely, the now-extinct *Porzana sandwichensis* (Gmelin, 1789).

Hawaiian Crow or 'alala *Corvus hawaiiensis*
Peale, 1848

Latham (1781–1782:384, no. 18) described his "Tropic Crow" from a specimen said to

have come from "O-why-hee" which was then in the possession of Sir Joseph Banks. His description is as follows:

LENGTH twelve inches and a half. Bill an inch and a quarter in length; at the base pretty broad, and the tips of both mandibles notched: the plumage is of a glossy black above, but of a dull black on the under parts: the wings and tail are black with a gloss of green; the last rounded: vent and side feathers tipped with dusky white: legs and claws black.

From *O-why-hee*, one of the *Sandwich Islands*, in the South Seas. Described from a bird in the possession of Sir Joseph Banks.

An almost identical description appeared in his *General History of Birds* (1821–1828, vol. 3:37, no. 29).

Gmelin based his *Corvus tropicus* (1788–1793, vol. 1(1):372, no. 33) on Latham's 1781 description:

tropicus.

C. niger, crisso punctis sordide albis, cauda rotundata. Tropic Crow. *Lath. Syn.* I. 1. p. 384. n. 18.

Habitat in insula O-why-hee maris australis 12½ pollices longus.

Rostrum 1½ pollicem longum, basi latum; color supra splendidus, alarum et caudae in virescentem vergens; pedes et ungues nigri.

Two years later, Latham also described his "Tropic Crow" under the name *Corvus tropicus* (1790, vol. 1:157, no. 17).

Six bird specimens received by Banks from the third voyage are listed in the Solander catalogue under the genus *Corvus* (Medway 1979:320–321). One of them, and the one on which Latham undoubtedly based his description of the "Tropic Crow," is that which is mentioned in Solander catalogue entry no. 18 as "Corvus Owhy-hee." It is briefly described in ms lists 2 and 3, no. 23 as:

C. corpore toto nigro, cauda subcuneiformi 1.
Sol. cat. 18. Owy-hee

I do not know what became of this Banks specimen. It cannot be traced in the 1792 donations by Banks to Hunter and the British Museum or anywhere else and it must be presumed no longer to exist.

Ever since 1781, when Latham published

his description based on this specimen, doubts have been expressed whether his "Tropic Crow" is in fact the same species as the only species of *Corvus* known from the Hawaiian Islands. Such doubts have been based on the obvious size and certain plumage differences between the Hawaiian Crow and the bird described by Latham from that locality. Various writers have endeavored to determine the correct identity of Latham's bird.

Viellot (1816–1819, vol. 5:356) referred Gmelin's *Corvus tropicus* to *Cracticus*. Rothschild later considered (1893–1900:229) that possibly Viellot was not quite wrong in doing so but that such a bird was not likely to occur on Hawaii. Cassin (1858:120) considered that Latham's description was not applicable to the Hawaiian Crow and had doubts as to it having been a true *Corvus* at all. Sclater (1871:359) thought it very doubtful that Peale's *Corvus hawaiiensis* was the same as Gmelin's *Corvus tropicus*. Wilson and Evans (1890–1899:1) thought that Latham's description appeared to have been based on a pied specimen. Rothschild (1893–1900:229) thought that Gmelin's *Corvus tropicus* was not applicable to the Hawaiian Crow and considered previous writers fully justified in rejecting Gmelin's name. He reached the conclusion that "we must suppose that Latham described some entirely different bird with a wrong locality attached to it." Stresemann (1950:81) considered Latham's description of the "Tropic Crow" to be "that of a specimen of *Dissemurus paradiseus formosus* Cabanis in immature plumage (with white spots to the feathers of the abdomen and the under tail-coverts), lacking (through moult or violence) the greatly elongated outer pair of tail feathers." Lysaght (1959:324) was not altogether satisfied with Stresemann's identification, but considered that the size and iridescent plumage of Latham's bird made it clear that it was not the Hawaiian Crow.

We know that there was in the Banks collection at the relevant time a corvid-like specimen from the third voyage, said to have come from Owy-hee, and that Latham saw it and described it as the "Tropic Crow." However, his description does not fit at all satisfactorily the Hawaiian Crow. The specimen no longer

exists and it may be impossible to determine its true identity from Latham's description. It seems that the specimen probably bore an incorrect locality, a problem with some third-voyage bird specimens, particularly those in the Leverian Museum as Stresemann (1950: 81) has pointed out.

For these reasons it seems obvious that Gmelin's *Corvus tropicus* cannot be accepted for the Hawaiian Crow. In the circumstances the only proper course is to accept *Corvus hawaiiensis* Peale, 1848 as the valid name for the species. Appropriately enough, the type of *hawaiiensis* was collected in the vicinity of Kealahou Bay.

Sandwich Thrush *Turdus sandwichensis*
Gmelin, 1789

One of the bird specimens which Banks received from the third voyage is referred to as a *Turdus* from "Sandwich Isles" in Solander catalogue entry no. 123'4 (Medway 1979: 334). It was undoubtedly this specimen which was the basis of Latham's 1783 description (1783: 39, no. 40) of the "Sandwich Thrush":

LENGTH five inches and a half. Bill dusky: the upper parts of the plumage pale brown: forehead and under parts cinereous white: belly and lower part of the thighs pale brown: tail even at the end: legs dusky. Inhabits *Sandwich Islands*. In the collection of Sir Joseph Banks.

This Banks specimen is not referred to in the ms lists and it is presumed that it no longer existed when those lists were compiled.

Gmelin's *Turdus sandwichensis* (1788–1793, vol. 1(2): 813, no. 37) was based on Latham's description:

sandwichensis.

T. supra et abdomine fusciscens, subtus et fronte cinereo albus.

Sandwich Thrush. *Lath. Syn.* II. I. p. 39. n. 40.

Habitat in insulis Sandwich, 5½ pollices longus. Rostrum pedesque atri; cauda aequalis.

In 1790 Latham described it (1790, vol. 1: 338, no. 42) as *Turdus sanduicensis*. He also gave a description almost identical to that of 1783 in his *General History of Birds* (1821–1828, vol. 5: 117, no. 138).

The exact identity of Latham's "Sandwich Thrush" is unknown and probably indeterminate. Sclater (1871: 359) regarded it as a doubtful species; Wilson and Evans (1890–1899: xiii, fn. 2) said:

It is not possible to say with certainty what the "Sandwich Thrush" of Latham . . . may have been; but its length, "5½ inches" according to Latham's description, and its white forehead preclude its being *Phaeornis obscura* . . . It seems just possible that the bird described by Latham may have been *Oreomyza bairdi* . . .

Rothschild (1893–1900: 61), while saying that Latham's "Sandwich Thrush" was, in his opinion, a *Phaeornis*, and most likely *Phaeornis obscura*, later said (1893–1900: 301): "It is doubtful what is meant by the 'Sandwich Thrush'. Perhaps a *Phaeornis*, but the white forehead is not found in *Phaeornis*. The measure is too large to suit *Oreomyza bairdi*." Stresemann (1950: 83) included it among his "still undeterminable descriptions."

No birds other than *Vestiaria coccinea* are known to have been collected on Kauai, the home of *Oreomyza bairdi* Stejneger, 1887, during Cook's third voyage and, in any event, Latham's description does not seem to fit that species. It is probable that the specimen on which it was based, like that on which Latham based his "Tropic Crow," bore an incorrect locality and that it did not come from the Hawaiian Islands at all.

ACKNOWLEDGMENTS

I continue to be grateful to the librarians of the Alexander Turnbull Library and National Museum in Wellington and the General Library and Zoology Library of the British Museum (Natural History); to Dr. Herbert J. Schifter of the Naturhistorisches Museum in Vienna; to Dr. G. F. Mees of the Rijksmuseum van Natuurlijke Historie in Leiden; to Dr. M. J. Lagen of the Merseyside County Museums in Liverpool; and to my friend Dr. Michael E. Hoare of Wellington for his assistance in many ways. I am grateful also to the Public Record Office and British

Library for permission to publish extracts from the narratives of Edgar and Law; to the British Museum (Natural History) for permission to reproduce the Ellis Hawaiian bird drawings; and to the State Library of New South Wales for permission to reproduce the drawing by Sarah Stone. I continue to be most grateful to my wife Carole for her tolerance while I pursue my interest in the ornithology of Cook's voyages.

LITERATURE CITED

- ALLEN, E. G. 1951. The history of American ornithology before Audubon. *Trans. Amer. Phil. Soc.* n. s. 41(3):386-591.
- AMADON, D. 1950. The Hawaiian honeycreepers (Aves, Drepaniidae). *Bull. Amer. Mus. Nat. Hist.* 95:151-262.
- ANDERSON, W. n.d. *Characteres breves Avium* (in itinire nostro circum orbe visa) adhuc incognitarum anni 1772, 1773, 1774 et 1775. Ms, British Museum (Natural History). 13 pp.
- . n.d. *Zoologia nova Seu Characteres & Historia Animalium hactenus incognitorum qui in itinire nostro videbantur 1776 in Linguis Latinis & Anglicis traditus*. Ms, British Museum (Natural History). 38 pp.
- AUDEBERT, J. B., and L. P. VIEILLOT. 1802. *Oiseaux dorés ou à reflets métalliques*. 2 vols. Paris.
- BARROW, T. 1978. *Captain Cook in Hawaii*. Island Heritage Limited, Norfolk Island and Honolulu.
- BEAGLEHOLE, J. C., ed. 1967. *The journals of Captain James Cook on his voyages of discovery*. Vol. 3, *The voyage of the Resolution and Discovery 1776-1780*. 2 pts. Hakluyt Society Extra Series, no. 36. Cambridge University Press.
- BEDDIE, M. K., ed. 1970. *Bibliography of Captain James Cook*. 2d ed. Mitchell Library, Sydney.
- BERGER, A. J. 1972. *Hawaiian birdlife*. The University Press of Hawaii, Honolulu.
- BLUMENBACH, J. F. 1782. *Handbuch der Naturgeschichte*. 2d ed. Göttingen.
- . 1797-1810. *Abbildungen naturhistorischer gegenstände*. 10 pts. Göttingen.
- BOULTER, D. 1793. *Museum Boulterianum*. A catalogue of the curious and valuable collection of natural and artificial curiosities in the extensive museum of Daniel Boulter, Yarmouth. (Copy in Balfour Library, University of Cambridge.)
- BRITTEN, J. 1916. William Anderson (†1778) and the plants of Cook's third voyage. *J. Bot.* 54:345-352.
- BRYAN, E. H., and J. C. GREENWAY. 1944. Contribution to the ornithology of the Hawaiian Islands. *Bull. Mus. Comp. Zool.* 94(2):80-142.
- BULLOCK, W. 1808. *A companion to the Liverpool Museum*. 6th ed. Hull.
- . 1810. *A companion to Mr. Bullock's Museum*. 8th ed. London.
- . 1813. *A companion to the London Museum and Pantheon*. 15th ed. London.
- . 1814. *A companion to the London Museum and Pantheon*. 17th ed. London.
- . 1817. *A concise and easy method of preserving subjects of natural history*. London.
- . 1819. *Catalogue of the Roman gallery, of antiquities and works of art, and the London Museum of Natural History . . . which will be sold by auction . . . by Mr. Bullock . . . on Thursday, the 29th of April, 1819 . . .* London. [Copies used for this paper are those in the Zoology Library, British Museum (Natural History); Balfour Library, University of Cambridge; Rijksmuseum van Natuurlijke Historie, Leiden.]
- BURTON, P. J. K. 1969. Two bird specimens probably from Cook's voyages. *Ibis* 111:388-390.
- CASSIN, J. 1858. United States exploring expedition during the years 1838, 1839, 1840, 1841, 1842 . . . Vol. 8, Mammalogy and ornithology. Philadelphia.
- CLIFT, W. 1836. *Memoranda relating to the sale of old and duplicate specimens of natural history and anatomical articles by the Trustees of the British Museum, to the Royal College of Surgeons in London, in the year 1809*. Ms, British Museum (Natural History).
- COOK, J., and J. KING. 1784. *A voyage to the Pacific Ocean . . . performed in His Majesty's Ships the Resolution and Dis-*

- covery in the years 1776, 1777, 1778, 1779 and 1780. 3 vols. London.
- COPE, ZACHARY. 1959. The history of the Royal College of Surgeons of England. Anthony Blond, London.
- DANCE, S. P. 1966. Shell collecting: an illustrated history. Faber and Faber, London.
- . 1971. The Cook voyages and conchology. *J. Conch.* 26:354–379.
- DERBY, Earl of. 1838. Catalogue of birds submitted to my selection by Mr. Audubon on the part of Dr. Townshend from various quarters this 15 June/38. Ms, Merseyside County Museums, Liverpool.
- . n.d. General index of the birds in my collection at Knowsley. 2 manuscript lists: 1st containing entries 1–306; 2nd containing entries 1–3918. Merseyside County Museums, Liverpool.
- DIXON, GEORGE. 1789. A voyage round the world . . . in the *King George* and *Queen Charlotte*. Goulding, London.
- DOLE, S. B. 1869. A synopsis of the birds hitherto described from the Hawaiian Islands. *Proc. Boston Soc. of Nat. Hist.* 12:294–309.
- . 1879. List of birds of the Hawaiian Islands. The Hawaiian Annual for 1879: 41–58. Thos. G. Thrum.
- DOVOVAN, E. 1806. Catalogue of the Leverian Museum. 7 pts, with Appendix. London. [Copies used for this paper are in the Zoology Library, British Museum (Natural History); Balfour Library, University of Cambridge; London Borough of Southwark Public Library; Area Central Library, Middleton; Merseyside County Museums, Liverpool.]
- . 1817. Notice of intention to submit his Museum of Natural History to sale by public auction. London.
- DRYANDER, J. 1796–1800. *Catalogus Bibliothecae Historico-Naturalis Josephi Banks*. 5 vols. London.
- . n.d. Manuscript catalogue of drawings of birds by W. W. Ellis and William Webber, and of specimens collected on Captain James Cook's third voyage round the world, 1776–1780. Zoology Library, British Museum (Natural History).
- . n.d. Four ms lists of the birds in the drawings of J. G. A. Forster & W. W. Ellis (& Webber) from Capt. J. Cook's second voyage, 1772–75, and third voyage 1776–80. Zoology Library, British Museum (Natural History).
- EDGAR, T. 1778–1779. Log. 5 August 1778–16 June 1779. Adm 55/24. Public Record Office, London.
- ELLIS, W. 1776–1780. Unpublished water-colour and pencil drawings of animals made during Cook's third voyage. British Museum (Natural History).
- . 1782. An authentic narrative of a voyage performed by Captain Cook and Captain Clerke in His Majesty's Ships *Resolution* and *Discovery*, during the years 1777, 1778, 1779 and 1780. 2 vols. London.
- FINSCH, O. 1898. On the so-called "Sandwich Rail" in the Leyden Museum. Notes from the Leyden Museum 20:77–80.
- . 1899. List of the birds bought by Temminck on the sale of Bullock's Museum, at London, May 4th to June 10th 1819. Ms. catalogue. 53 pp. Rijksmuseum van Natuurlijke Historie, Leiden.
- FORCE, R. W., and M. FORCE. 1968. Art and artifacts of the 18th Century. Bishop Museum Press, Honolulu.
- FORSTER, J. G. A. 1781a. Beschreibung des rothen Baumläufers von der Insel O-Waihi. *Göttingisches Mag. der Wiss. und Litt.* 1(6):346–351. [Reprinted in Huber, vol. 5(1796):233–240, and in Forster and Gervinus, vol. 4:374–376.]
- . 1781b. Fragmente über Capitain Cooks letzte Reise und sein Ende. *Göttingisches Mag. der Wiss. und Litt.* 1(6):387–429. (Reprinted in Popp 1976.)
- FORSTER, T., and G. G. GERVINUS, eds. 1843. *Georg Forster's sämtliche Schriften*. 9 vols. Brockhaus, Leipzig.
- GILBERT, G. 1776–1780. Narrative of Captain Cook's last voyage. Add. Ms. 38530. British Library, London.
- GMELIN, J. F. 1788–1793. *Systema naturae* . . . 13th ed. 3 vols. (9 pts.) Vol. 1(1), 1788; vol. 1(2), 1789. Lipsiae.
- GRAY, G. R. 1844–1849. The genera of birds . . . Longman, Brown, Green and Longmans, London.
- . 1859. Catalogue of the birds of the tropical islands of the Pacific Ocean, in the collection of the British Museum. London.

- GREENWAY, J. C. 1967. Extinct and vanishing birds of the world. Dover Publications, New York.
- . 1968. Family Drepanididae. Checklist of the birds of the world, vol. 14. Mus. Comp. Zool., Cambridge.
- HARTLAUB, G. 1892. Vier seltene Rallen. Abh. naturw. Ver. Bremen 12(3):389–402.
- . 1896. Ein Beitrag zur Geschichte der ausgestorbenen Vögel der Neuzeit sowie derjenigen deren Fortbestehen bedroht erscheint. Abh. naturw. Ver. Bremen 14(1): 1–43.
- HAWAII AUDUBON SOCIETY. 1975. Hawaii's birds. 3rd ed. Hawaii Audubon Society, Honolulu.
- HENSHAW, H. W. 1902. Birds of the Hawaiian Islands being a complete list of the birds of the Hawaiian possessions with notes on their habits. Thos. G. Thrum, Honolulu. (Also in Thos. G. Thrum, The Hawaiian Annual 1902:54–106, 1903:73–117, 1904: 113–145.)
- HUBER, L. F., ed. 1789–1797. Kleine Schriften: ein Beytrag zur Völker- und Länderkunde, Naturgeschichte und Philosophie des Lebens. 6 vols. Kummer, Leipzig.
- IREDALE, T. 1948. Bullock's Museum. Austr. Zool. 11(3): 233–237.
- JUDD, B. 1929. Voyages to Hawaii before 1860. Hawaiian Mission Children's Society. (1974 rev. ed., H. Y. Lind, ed. University Press of Hawaii, Honolulu.)
- KAEPLER, A. L. 1974. Cook voyage provenance of the "artificial curiosities" of Bullock's Museum. Man n.s. 9:68–92.
- . 1978. "Artificial Curiosities" being an exposition of native manufactures collected on the three Pacific voyages of Captain James Cook, R. N. Bernice P. Bishop Museum Spec. Publ. 65. Bishop Museum Press, Honolulu.
- KING, J. 1776–1778. Log and Proceedings, 12 February 1776–1 February 1778. Adm 55/116. Public Record Office, London.
- . 1778–1779. Log and Proceedings, 4 February 1778–29 November 1779. Adm 55/122. Public Record Office, London.
- LATHAM, J. 1781–1782, 1783, 1785, 1787, 1801. A general synopsis of birds. 3 vols. (6 pts). Vol. 1(1), 1781; vol. 1(2), 1782; vol. 2(1, 2), 1783; vol. 3(1, 2), 1785. 1st suppl., 1787; 2d suppl., 1801. London.
- . 1790. Index Ornithologicus. 2 vols. London.
- . 1821–1828. General history of birds. 11 vols. London.
- . n.d. Collection of 888 original water-colour drawings of birds. 6 vols. British Museum (Natural History).
- LAW, J. 1778–1779. Journal. Add. Ms. 37327. British Library, London.
- LEDYARD, J. 1783. A journal of Captain Cook's last voyage to the Pacific Ocean, and in quest of a North-West Passage, between Asia and America . . . Faithfully narrated from the original ms. of Mr. John Ledyard. Hartford.
- LEUSCHNER, B., ed. 1973. Georg Forsters Werke. Sämtliche Schriften, Tagebücher, Briefe. Vol. 12. Berlin.
- LEVAILLANT, F. 1806. Histoire naturelle des promérops et des guépriers. Paris.
- LYSAGHT, A. M. 1959. Some eighteenth century bird paintings in the library of Sir Joseph Banks (1743–1820). Bull. Br. Mus. Nat. Hist. (hist. ser.) 1(6):251–371.
- . 1977. Banks' artists in the *Endeavour*. In The Journal of H. M. S. *Endeavour* 1768–1771 by Lieutenant James Cook. Genesis Publications, Guildford.
- MÄRTER, F. J. 1783–1784. Beschreibung einiger Vögeln aus dem Geschlechte der Papageyen und Kolubri, von den Rüsten der Südsee. Physikalische Arbeiten der einträchtigen Freunde in Wien 1(1):75–76; 1(2):47–48.
- MARTINI, F. H. W. 1786. Allgemeine Geschichte der Natur, vol. 6. Berlin.
- MATHEWS, G. M. 1931. John Latham (1740–1837): an early English ornithologist. Ibis 13th ser. 1:466–475.
- MEDWAY, D. G. 1976. Extant types of New Zealand birds from Cook's voyages. Notornis 23:44–60, 120–137.
- . 1977. The Ellis bird drawings. The Turnbull Library Record n.s. 10(2):23–27 and addendum in 12(1) (1979):45.
- . 1979. Some ornithological results of Cook's third voyage. J. Soc. Bibliog. Nat. Hist. 9(3):315–351.

- MERREM, B. 1784–1786. *Beyträge zur besondern Geschichte der Vögel*. Goettingen and Leipzig.
- . 1786–1787. *Avium rariorum et minus cognitarum, Icones et Descriptiones*. Lipsiae.
- MILLER, E. 1973. *That noble cabinet: a history of the British Museum*. Andre Deutsch, London.
- MULLENS, W. H. 1915. Some museums of old London. 1. The Leverian Museum. *Mus. J.* 15:123–129, 162–172.
- . 1917–1918. Some museums of old London. 2. William Bullock's London Museum. *Mus. J.* 17:51–56, 132–137, 180–187.
- MULLENS, W. H., and H. K. SWAN. 1917. *A bibliography of British ornithology*. London.
- MUNFORD, J. K., ed. 1964. *John Ledyard's journal of Captain Cook's last voyage*. Oregon State University Press, Corvallis.
- MUNRO, G. C. 1944. *Birds of Hawaii*. Honolulu. (8th printing by Charles E. Tuttle Co., Rutland, Vermont, and Tokyo, 1976.)
- MURRAY-OLIVER, A. 1975. *Captain Cook's Hawaii as seen by his artists*. Millwood Press, Wellington.
- MURRAY-OLIVER, A. A. ST. C. M. 1977. A collection of drawings made by William Ellis on Cook's third voyage. *The Turnbull Library Record* n.s. 10(2):5–9, 28–37.
- NEWTON, A. 1891. Notes on some old museums. *Mus. Assoc. Rep. of Proc.*, pp. 28–46.
- . 1892. Ornithology of the Sandwich Isles. *Nature*, no. 1168, vol. 45:465–469. (Reproduced in part in Wilson and Evans 1890–1899:xi–xix.)
- NORTHWOOD, J. d'A. 1942. Early bird records. From ms log of Capt. Clerke, 1779 (with Capt. James Cook) at Hawaii. *Elepaio* 3(3):10–11.
- PEARSE, T. 1968. *Birds of the early explorers in the northern Pacific*. Published by the author, Comox, British Columbia.
- PELZELN, A. 1872. Ueber Geschlechtsdifferenzen bei den Meliphaeiden der Sandwich-Inseln. *J. Orn.* 20:24–30.
- . 1873. On the birds in the Imperial Collection at Vienna obtained from the Leverian Museum. *Ibis* 3d ser. (3):14–54, 105–124.
- . 1874. Letter to editor. *Ibis* 3d ser. (4):461–462.
- PELZELN, A., and L. LORENZ. 1886–1888. Typen der ornithologischen Sammlung des k. k. naturhistorischen Hofmuseums. *Ann. Naturh. Mus. Wien* 1[1886]:249–270; 2[1887]:191–216, 339–352; 3[1888]:37–62.
- PENNANT, T. 1784, 1785, 1787. *Arctic zoology*. Vol. 1, 1784; vol. 2, 1785; suppl., 1787. Henry Hughs, London. (Reprinted in 1974 by Arno Press, New York.)
- PERKINS, R. C. L. 1893. On collecting in Kona, Hawaii. *Ibis* 6th ser. (5):101–112.
- . 1903. Aves. In David Sharp, ed., *Fauna Hawaiiensis* 1(4):368–465. University Press, Cambridge.
- POPP, K. G. 1976. *Cook der Entdecker*. Verlag Philipp Reclam jun, Leipzig.
- PORTLOCK, N. 1789. A voyage round the World . . . performed in 1785, 1786, 1787, and 1788, in the *King George* and *Queen Charlotte* . . . Stockdale, London.
- QUEKETT, J. T. 1859. Descriptive catalogue of the specimens of natural history in spirit contained in the Museum of the Royal College of Surgeons of England. *Vertebrata: Pisces, Reptilia, Aves, Mammalia*. London.
- RICKMAN, J. 1781. *Journal of Captain Cook's last voyage to the Pacific Ocean, on Discovery; performed in the years 1776, 1777, 1778, 1779 . . .* London.
- RIENITS, R., and T. RIENITS. 1968. *The voyages of Captain Cook*. Paul Hamlyn.
- RIPLEY, S. D. 1977. *Rails of the world*. David R. Godine, Boston.
- ROTHSCHILD, L. W. 1893–1900. *The avifauna of Laysan and the neighbouring islands*. R. H. Porter, London.
- . 1907. *Extinct birds . . .* Hutchinson, London.
- ROYAL COLLEGE OF SURGEONS. 1805–1844. *Minutes of trustees of the Hunterian Collection*, vol. 1.
- SAMWELL, D. 1781. A catalogue of a small but choice collection of rarities, from the new-discovered places in the South Seas; . . . which will be sold by auction . . . on

- Thursday, June 14, 1781, and the following day. London. (The only known copy of this catalogue is in the Bernice P. Bishop Museum, Honolulu.)
- SASSI, M. 1939. Die wertvollsten Stücke der Wiener Vogelsammlung. *Ann. Naturh. Mus. Wien* 50:395-409.
- SCHLEGEL, H. 1865. Ralli. *Museum des Pays-Bas*. 5:25-26.
- SCLATER, P. L. 1871. Remarks on the avifauna of the Sandwich Islands. *Ibis* 3rd ser. (1):356-362.
- . 1885. On the muscicapine genus *Chasiempis*. *Ibis* 5th ser. (3):17-19.
- SHARPE, R. B. 1885. Catalogue of the birds in the British Museum, vol. 10. London.
- . 1894. Catalogue of the birds in the British Museum, vol. 23. London.
- . 1906. Birds. In *The history of the collections contained in the Natural History departments of the British Museum*. 2 vols. and appendix. Trustees Brit. Mus. 2:79-515.
- SHAW, G. 1806. *Museum Hunterianum*. Ms catalogue, Library of Royal College of Surgeons, London.
- SHAW, G. (and F. P. NODDER). 1790-1813. *The naturalist's miscellany*. 24 vols. London.
- SHEPPERSON, W. S. 1961. William Bullock—An American failure. *Bull. Hist. Philos. Soc. Ohio* 19(2):144-152.
- SMITH, E. 1911. *The life of Sir Joseph Banks*. John Lane, London and New York.
- SOUTHWELL, T. 1908. Notes on an eighteenth century museum at Great Yarmouth. *Mus. J.* 8:110-123.
- STEJENGER, L. 1887. Birds of Kauai Island, Hawaiian Archipelago, collected by Mr. Valdemar Knudsen, with descriptions of new species. *Proc. U.S. Natl. Mus.* 10:75-102.
- ST. JOHN, H. 1976a. Biography of David Nelson, and an account of his botanizing in Hawaii. *Pac. Sci.* 30(1):1-5.
- . 1976b. New species of Hawaiian plants collected by David Nelson in 1779. *Hawaiian Plant Studies* 52. *Pac. Sci.* 30(1):7-44.
- STRESEMANN, E. 1949. Birds collected in the North Pacific area during Capt. James Cook's last voyage (1778 and 1779). *Ibis* 91:244-255.
- . 1950. Birds collected during Capt. James Cook's last expedition (1776-1780). *Auk* 67:66-88.
- . 1953a. Additions and corrections to birds collected in the North Pacific area during Capt. James Cook's last voyage (*Ibis* 91:244-255). *Ibis* 95:371.
- . 1953b. Analyse von C. J. Temmincks Catalogue systematique (1807). *Zool. Med.* 31(29):319-331.
- . 1954. Ausgestorbene und aussterbende Vogelarten, vertreten im Zoologischen Museum zu Berlin. *Mitt. Zool. Mus. Berlin* 30(1):38-53.
- . 1975. *Ornithology from Aristotle to the present*. Harvard University Press, Cambridge, Mass. and London. [English translation of Stresemann's (1951) *Die Entwicklung der Ornithologie von Aristoteles bis zur Gegenwart* (Berlin).]
- SWEET, J. M. 1963. Robert Jameson in London, 1793. *Ann. Sci.* 19(2):81-116.
- . 1970. William Bullock's collection and the University of Edinburgh, 1819. *Ann. Sci.* 26(1):23-32.
- TEMMINCK, C. J., and Baron LAUGIER. 1828. *Nouveau recueil de planches coloriées d'oiseaux* . . . , fasc. 77. Paris.
- TOWNSEND, J. K. 1839. *Narrative of a journey across the Rocky Mountains . . . and a visit to the Sandwich Islands*. Henry Perkins, Philadelphia.
- VIEILLLOT, L. P. 1805. *Histoire naturelle des plus beaux oiseaux chanteurs de la zone torride*. Paris.
- . 1816-1819. Articles on birds in the *Nouveau dictionnaire d'histoire naturelle*. 2d ed., 36 vols. Paris.
- WAGSTAFFE, R. 1978. Type specimens of birds in the Merseyside County Museums. Merseyside County Council, Liverpool.
- WALLIS, H. 1978. Publication of Cook's journals: some new sources and assessments. *Pac. Stud.* 1(2):163-194.
- WEBBER, J. 1776-1780. Unpublished water-color drawings of animals made during Cook's third voyage. Department of Prints and Drawings, British Museum.
- WHITEHEAD, P. J. P. 1969. Zoological speci-

- mens from Captain Cook's voyages. *J. Soc. Bibliog. Nat. Hist.* 5(3):161–201.
- . 1978. A guide to the dispersal of zoological material from Captain Cook's voyages. *Pac. Stud.* 2(1):52–93.
- WHITLEY, G. P. 1970. Early history of Australian zoology. *R. Zool. Soc. of New South Wales*, Sydney.
- WILSON, E. 1977. Observations of Hawaiian avifauna during Cook's expeditions. *Elepaio* 38(2):13–18.
- WILSON, S. B., and A. H. EVANS. 1890–1899. *Aves Hawaiiensis: The birds of the Sandwich Islands*. R. H. Porter, London, (The page references herein are to the 1974 reprint by Arno Press, New York.)
- WYSTRACH, V. P. 1977. Anna Blackburne (1726–1793): a neglected patroness of natural history. *J. Soc. Bibliog. Nat. Hist.* 8(2):148–168.
- ZIMMERMANN, H. 1781. Heinrich Zimmermanns von Wissloch in der Pfalz, Reise um die Welt, mit Capitain Cook. Mannheim. [The quotation herein is from the 1930 English translation of E. Michaelis and C. French, ed. by F. W. Howay (The Ryerson Press, Toronto).]